U.S. Department of the Interior
Bureau of Land Management

County of Riverside
Planning Department

Desert Quartzite Solar Project

DRAFT
Plan Amendment/ Environmental Impact Statement/ Environmental Impact Report

DOI-BLM-CA-D060-2017-0002
CA State Clearinghouse No. 2015031066



August 2018

Estimated Lead Agency Total Costs Associated with Developing and Producing This EIS

$1.1 million

Notice of Completion

A Draft Environmental Impact Report (DEIR) has been completed for the Desert Quartzite Solar Project described below:

Condition Use Permit No. 3721 (CUP 3721), Draft Environmental Impact Report No. 00544, SCH 2015031066

First Solar Development, LLC (the Applicant), a wholly-owned subsidiary of First Solar Development, Inc. (Applicant) is proposing the Desert Quartzite Solar Project Conditional Use Permit No. 3721 (CUP 3721). The Applicant is proposing the construction, operation, maintenance, and decommissioning of the Desert Quartzite Solar Project, a solar photovoltaic (PV) electrical generating facility of up to 450 megawatts (MW) and 2.79-mile gen-tie line that would together occupy a total of 3,770 acres.

Copies of the DEIR and its Technical Appendices are available for review at the Riverside County Planning Department offices at 4080 Lemon Street, 12th Fl., Riverside, California, 92501. Copies of the documents will also be provided to the following libraries for public review:

Palo Verde Valley District Libaray
125 West Chanslor Way
Blythe, CA 92225

Lake Tamarisk Branch Library
43880 Lake Tamarisk Drive
Desert Center, CA 92239

The DEIR will be posted online by County of Riverside and will be available at http://planning.rctlma.org/

Written questions should be mailed to the Riverside County Planning Department, Attention: Russell Brady, Project Planner, at 4080 Lemon Street, 12th Floor, Riverside, CA 92501. For further information regarding this project, please contact Russell Brady at (951) 955-3025 or e-mail rbrady@rivco.org.

Written comments on the document must be submitted to the Riverside County Planning Department no later than 5:00 P.M. on November 8, 2018. All comments received by the deadline will be included in the Final EIR, which will be presented to the hearing body. Notification of the public hearing will be provided at a later date.

RIVERSIDE COUNTY PLANNING DEPARTMENT

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #2015031066

Project Title: Desert Quartzite Solar Project

Lead Agency: Riverside County | Contact Person: Russell Brady

Mailing Address: 4080 Lemon St., 12th Floor | Phone: 951-955-3025

City: Riverside | Zip: 92501 | County: Riverside

Project Location: County: Riverside | City/Nearest Community: Blythe

Cross Streets: 16th Avenue/Seeley Avenue | Zip Code: 92225

Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W | Total Acres: 160

Assessor's Parcel No.: 879-110-001 | Section: NE/4 15 | Twp.: 7 South | Range: 21 East | Base: San Bern.

Within 2 Miles: State Hwy #: _____ | Waterways: _____

Airports: Blythe | Railways: _____ | Schools: _____

Document Type:

CEQA: ☐ NOP ☒ Draft EIR ☐ Early Cons ☐ Supplement/Subsequent EIR ☐ Neg Dec (Prior SCH No.) _____ ☐ Mit Neg Dec Other: _____

NEPA: ☐ NOI ☐ EA ☒ Draft EIS ☐ FONSI

Other: ☒ Joint Document ☐ Final Document ☐ Other: _____

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☒ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☐ Other: _____

Development Type:

☐ Residential: Units _____ Acres _____
☐ Office: Sq.ft. _____ Acres _____ Employees _____
☐ Commercial: Sq.ft. _____ Acres _____ Employees _____
☐ Industrial: Sq.ft. _____ Acres _____ Employees _____
☐ Educational: _____
☐ Recreational: _____
☐ Water Facilities: Type _____ MGD _____
☐ Transportation: Type _____
☐ Mining: Mineral _____
☒ Power: Type Solar PV MW450
☐ Waste Treatment: Type _____ MGD _____
☐ Hazardous Waste: Type _____
☐ Other: _____

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Fiscal ☒ Recreation/Parks ☒ Vegetation
☐ Agricultural Land ☒ Flood Plain/Flooding ☐ Schools/Universities ☒ Water Quality
☒ Air Quality ☒ Forest Land/Fire Hazard ☒ Septic Systems ☒ Water Supply/Groundwater
☒ Archeological/Historical ☒ Geologic/Seismic ☐ Sewer Capacity ☒ Wetland/Riparian
☒ Biological Resources ☒ Minerals ☒ Soil Erosion/Compaction/Grading ☒ Growth Inducement
☐ Coastal Zone ☒ Noise ☒ Solid Waste ☒ Land Use
☒ Drainage/Absorption ☒ Population/Housing Balance ☒ Toxic/Hazardous ☒ Cumulative Effects
☒ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☐ Other: _____

Present Land Use/Zoning/General Plan Designation:

W-2-10, formerly agricultural, currently no land use.

Project Description: *(please use a separate page if necessary)*

The Applicant proposes to construct, operate, maintain, and decommission the DQSP in the southern California inland desert. The Project would generate up to 450 megawatts (MW) using solar photovoltaic (PV) technology. The Project would occupy 3,616 acres of BLM land. In addition to the BLM ROW application, the Applicant submitted a Conditional Use Permit (CUP) Application to the County of Riverside on February 25, 2015 (Riverside County CUP No. 3721), for 160 acres of privately-owned land adjacent to the BLM-administered land. Within this application area, the Applicant has proposed a Project that would occupy approximately 3,770 acres.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

S Air Resources Board
____ Boating & Waterways, Department of
____ California Emergency Management Agency
____ California Highway Patrol
____ Caltrans District # ____
____ Caltrans Division of Aeronautics
____ Caltrans Planning
____ Central Valley Flood Protection Board
____ Coachella Valley Mtns. Conservancy
____ Coastal Commission
____ Colorado River Board
____ Conservation, Department of
____ Corrections, Department of
____ Delta Protection Commission
____ Education, Department of
____ Energy Commission
S Fish & Game Region # 6
____ Food & Agriculture, Department of
____ Forestry and Fire Protection, Department of
____ General Services, Department of
____ Health Services, Department of
____ Housing & Community Development
S Native American Heritage Commission

____ Office of Historic Preservation
____ Office of Public School Construction
____ Parks & Recreation, Department of
____ Pesticide Regulation, Department of
____ Public Utilities Commission
X Regional WQCB # 7
____ Resources Agency
____ Resources Recycling and Recovery, Department of
____ S.F. Bay Conservation & Development Comm.
____ San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
____ San Joaquin River Conservancy
____ Santa Monica Mtns. Conservancy
____ State Lands Commission
____ SWRCB: Clean Water Grants
____ SWRCB: Water Quality
____ SWRCB: Water Rights
____ Tahoe Regional Planning Agency
____ Toxic Substances Control, Department of
____ Water Resources, Department of
____ Other: ____
____ Other: ____

Local Public Review Period (to be filled in by lead agency)

Starting Date August 10, 2018 Ending Date November 8, 2018

Lead Agency (Complete if applicable):

Consulting Firm: AECOM
Address: 10 Patewood Dr., Bldg. VI, Suite 500
City/State/Zip: Greenville, SC 29615
Contact: Robert Dover
Phone: 864-918-2892

Applicant: First Solar Development, LLC.
Address: 135 Main St., 6th Floor
City/State/Zip: San Francisco, CA 94105
Phone: 415-935-2514

Signature of Lead Agency Representative: John Gfeldbrand **Date:** 8/2/2018

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

E:\GIS\Projects\DesertQuartzite\Figures\FIG_02_01_ProjectLocation.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Colorado River Substation
- Gen-Tie Line

Surface Management

- BLM
- State

Boundaries

- State Boundary
- County Boundary
- Urban Area

Roads

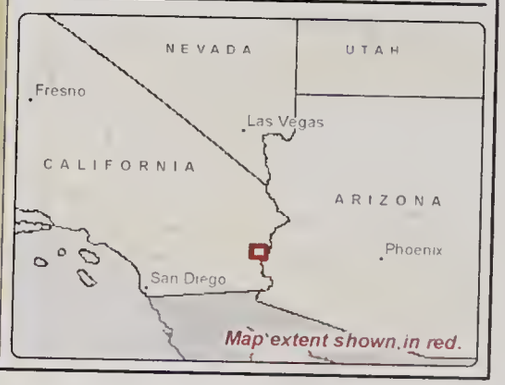
- Interstate
- US Highway
- State Highway
- Other Roads

Mesa Dr
Black Creek Rd
Gas Line Rd
N Lovekin Blvd
Blythe Airport
Blythe
10
Mesa Dr
78
S Defrain Blvd
22nd Ave
Ripley
28th Ave
Wileys Well Rd
Bradshaw Trl
S Neighbours Blvd
Colorado River
CALIFORNIA
ARIZONA
Palo Verde
RIVERSIDE COUNTY
IMPERIAL COUNTY

Figure 2-1
Project Location

0 1 2 Miles
0 2 4 Kilometers
N

Date: 1/19/2016
Sources: AECOM, BLM, ESRI, First Solar, US Census, USGS



1/19/2016

#1050361856
ID:88073720
HD
243
.C2
D477
2018

Desert Quartzite Solar Project

Draft Plan Amendment

Environmental Impact Statement/ Environmental Impact Report

Lead Agencies:

Federal - U.S. Department of Interior, Bureau of Land Management (BLM)
State of California - Riverside County, California

BLM Proposed ROW Grant CACA-049397

State Clearinghouse Number 2015031066

August 2018

The BLM manages more land – 253 million acres – than any other Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western States, including Alaska. The Bureau, with a budget of about $1 billion, also administers 700 million acres of subsurface mineral estate throughout the nation. The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225

DOI-BLM-CA-D060-2017-0002

Palm Springs South Coast Field Office
Desert Quartzite Solar Project
Draft California Desert Conservation Area (CDCA) Plan Amendment/Environmental Impact Statement/Environmental Impact Report for the Desert Quartzite Solar Project
Proposed Right-of-Way (ROW) Grant CACA-049397

Lead Agency: Bureau of Land Management (BLM)
Palm Springs / South Coast Field Office
1201 Bird Center Drive, Palm Springs, CA 92262

ABSTRACT

The Palm Springs South Coast Field Office of the BLM has prepared this Draft Proposed Plan Amendment (PA) to the California Desert Conservation Area (CDCA) Plan/Environmental Impact Statement/Environmental Impact Report (Draft PA/EIS/EIR), which analyzes the environmental impacts of the proposed Desert Quartzite Solar Project (DQSP; the Project). The Project is described in right-of-way (ROW) grant application number CACA-049397 filed with the BLM by First Solar Development, LLC (the Applicant), a wholly-owned subsidiary of First Solar Development, Inc. The Project area under application for BLM approval is approximately 5,115 acres. In addition to the BLM ROW application, the Applicant submitted a Conditional Use Permit (CUP) Application to the County of Riverside on February 25, 2015 (Riverside County CUP No. 3721), for 160 acres of privately-owned land adjacent to the BLM-administered land. Within this application area, the Applicant has proposed a Project that would occupy approximately 3,770 acres. This includes 3,560 acres for the portion of the solar facility on BLM land; 54 acres for the proposed 230 kilovolt (kV) transmission line (generation interconnection [gen-tie] line) on BLM land, 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land, and 154 acres for the portion of the solar facility on private land. The larger acreage under application allows for the BLM and the County to consider various site layouts as Project alternatives for their environmental analysis. If approved, the final proposed ROW grant for the Project would be 3,616 acres of BLM land, and the County authorization for use of the private land would cover 154 acres.

The Draft PA/EIS/EIR evaluates the potential effects of the Proposed Action, two other action alternatives, and a No Action Alternative on BLM-administered lands and privately-owned lands under the County's jurisdiction. Following the public review period and consideration of public comments, BLM will develop a Final PA/EIS/EIR, which will be used by BLM to render a decision on whether to deny, grant, or grant with modifications the requested ROW, and by the County to render a decision on issuing a CUP. In addition to the decision on the ROW application, the BLM is considering associated amendments to the CDCA Plan to accommodate the Proposed Action. The PA decisions considered in the Draft PA/EIS are:

PA1: The CDCA Plan would be amended to identify the development footprint as suitable for the proposed type of solar energy use. This would be adopted if a ROW were granted for the Project, the Resource Avoidance Alternative, or the Reduced Project Alternative.

PA2: The CDCA Plan would be amended to authorize a portion of the gen-tie corridor that is located outside of BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52. This would be adopted if a ROW were granted for the Project, the Resource Avoidance Alternative, or the Reduced Project Alternative.

If these two decisions are not taken, the CDCA Plan would not be amended. This would result if the No Action Alternative were selected.

The Field Manager of the Palm Springs South Coast Field Office has the authority for site management of future activities related to ROW Grant CACA-049397 and is the BLM Authorized Officer for this Draft PA/EIS/EIR.

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Palm Springs South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262
www.blm.gov/california

August 10, 2018

Dear Reader:

Attached for your review and comment is the Draft Proposed Plan Amendment (PA) to the California Desert Conservation Area (CDCA) Plan and Environmental Impact Statement/Environmental Impact Report (Draft PA/EIS/EIR), which analyzes environmental impacts of the proposed Desert Quartzite Solar Project (DQSP) for the Bureau of Land Management (BLM) Palm Springs South Coast Field Office and the County of Riverside. The BLM prepared this document in accordance with the National Environmental Policy Act of 1969, as amended; the Federal Land Policy and Management Act of 1976, as amended, and its implementing regulations; the BLM's Land Use Planning Handbook (H-1601-1); the California Environmental Quality Act of 1970; and other applicable law and policy.

The DQSP is described in right-of-way (ROW) grant application number CACA-049397 filed with the BLM by Desert Quartzite, LLC (the Applicant), a wholly-owned subsidiary of First Solar Development, Inc. on December 17, 2013. In addition to the BLM ROW application, the Applicant submitted a Conditional Use Permit (CUP) Application to the County of Riverside on February 25, 2015 (Riverside County CUP No. 3721), for 160 acres of privately-owned land adjacent to the BLM-administered land. Within these application areas, the Applicant has proposed the DSQP that would occupy approximately 3,770 acres.

The BLM encourages the public to provide information and comments about the Draft PA/EIS/EIR, including the adequacy and accuracy of proposed alternatives, analysis of respective management decisions, and any new information. In developing the PA/EIS/EIR, the BLM may select various management decisions from each of the analyzed alternatives for the purpose of creating a management strategy that best meets the needs of the resources and values in this area under the principals of multiple use and sustained-yield mandate. As a member of the public, your timely comments on the Draft PA/EIS/EIR for the DQSP will help the BLM formulate the Final PA/EIS/EIR. Comments will be accepted for 90 calendar days from August 10 to November 8, 2018 following the Environmental Protection Agency's (EPA) publication of its Notice of Availability in the Federal Register. The BLM can best use your comments and information if received within the review period. Comments may be submitted electronically at: blm_ca_desert_quartzite_solar_project@blm.gov

Comments may also be submitted by mail to: Erika Grace, AECOM, 10 Patewood Dr., Bldg VI, Suite 500, Greenville, SC 29615. We strongly encourage you to submit comments electronically.

If you choose to submit comments on the PA/EIS/EIR, we request that you make your comments as specific as possible. Comments will be more helpful if they include suggested changes, sources, or methodologies, and reference to a section or page number in the Draft PA/EIS/EIR. Comments containing only opinion or preferences will be considered and included as part of the decision making process, although they will not receive a formal response from the BLM.

Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment — including your personal identifying information — may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Public meetings will be announced by local media, website, and/or public mailings at least 15 days in advance.

Copies of the PA/EIS/EIR will be sent to affected Federal, tribal, state, and local government agencies. Copies of the PA/EIS/EIR are available for public review and comment on the BLM website at:

https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=68211&dctmId=0b0003e880d8c579

Copies are also available for public review at the following BLM locations:

Palm Springs - South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262

California State Office
2800 Cottage Way, Suite W-1623
Sacramento, CA 95825

Thank you for your interest in the DQSP PA/EIS/EIR. We appreciate your contributions. For additional information or clarification regarding this document or the planning process, please contact Brandon G. Anderson, Project Manager, at (760) 833-7140 or bganderson@blm.gov.

Sincerely,

Do as Herrema
Field Manager

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EXECUTIVE SUMMARY

ES.1 Introduction and Background

This Draft Proposed Plan Amendment (PA) to the California Desert Conservation Area (CDCA) Plan/Environmental Impact Statement/Environmental Impact Report (Draft PA/EIS/EIR) analyzes impacts of the Desert Quartzite Solar Project (DQSP; the Project). The Project is described in the right-of-way (ROW) grant application number CACA-049397 filed with the Bureau of Land Management (BLM), and the Application for Land Use and Development/Conditional Use Permit (CUP) 03721 filed with the Riverside County Planning Department, by First Solar Development, LLC (the Applicant), a wholly-owned subsidiary of First Solar Development, Inc. The Applicant proposes to construct, operate, maintain, and decommission the DQSP in the southern California inland desert. The Project would generate up to 450 megawatts (MW) using solar photovoltaic (PV) technology.

The ROW grant application was originally filed for 7,245 acres on September 28, 2007, but has been revised since that time. The Project addressed in this Draft PA/EIS/EIR is described in the most recent Plan of Development (POD), dated November 16, 2016. The Applicant has also filed a Conditional Use Permit Application (Application for Land Use and Development, Form 295-1010, CUP No. 03721) with Riverside County (the County) for authorization to develop a portion of the Project on privately-owned land adjacent to the BLM-administered land. The total Project area under application for BLM and County approval is approximately 5,275 acres. Of this, the application for the BLM ROW grant includes approximately 5,115 acres of BLM administered lands, and the application for a County Conditional Use Permit includes 160 acres of private lands. Within this application area, the Applicant has proposed a Project that would occupy approximately 3,770 acres. This includes 3,560 acres for the portion of the solar facility on BLM land; 54 acres for the proposed 230 kilovolt (kV) transmission line (generation interconnection [gen-tie] line) on BLM land, 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land, and 154 acres for the portion of the solar facility on private land. The larger acreage under application allows for the BLM and the County to consider various site layouts as Project alternatives for their environmental analysis. If approved, the final proposed ROW grant for the Project would be 3,616 acres of BLM land, and the County authorization for use of the private land would cover 154 acres.

Although the Notice of Intent (NOI) To Prepare an Environmental Impact Statement for the Desert Quartzite Solar Project and a Possible Amendment to the California Desert Conservation Area Plan, 80 Fed. Reg. 12195 (March 6, 2015) stated that the Project would be capable of generating 300 MW, advances in photovoltaic (PV) solar technology will allow the installation of additional megawatts on the same footprint proposed in the applicable POD.

This Draft PA/EIS/EIR was prepared as a joint Federal/state environmental document that analyzes the impacts of the Project under both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). This document analyzes the effects of the proposed Project on the solar facility site and gen-tie line corridor and, as appropriate, surrounding areas.

ES.2 Purpose and Need

ES.2.1 BLM Purpose and Need

NEPA guidance published by the Council on Environmental Quality (CEQ) states that an Environmental Impact Statement's Purpose and Need section "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action" (40 Code of Federal Regulations (CFR) §1502.13). It describes the BLM's purpose and need for action, which is informed by but distinct from the Applicant's interests and objectives.

The BLM's purpose and need for the Project is to respond to the Applicant's application under Title V of the Federal Land Policy and Management Act of 1976 (FLPMA) (43 USC § 1761(a)(4)) for a ROW grant to construct, operate, maintain, and decommission a solar photovoltaic (PV) facility on public lands in compliance with FLPMA, BLM ROW regulations, and other applicable Federal laws. Taking into account BLM's multiple use mandate, the BLM will decide whether to approve, approve with modification(s), or deny issuance of a ROW grant to the Applicant for the proposed Project.

The Proposed Project, or "Action," if approved, also would assist the BLM in addressing several management and policy objectives advanced through the following authorities and policies applicable to the BLM:

1. Executive Order 13783 (March 28, 2017) and Secretary's Order 3349 (March 29, 2017) establishes policy to promote clean and safe development of the energy resources within the United States.
2. Executive Order 13807 (August 15, 2017) and Secretary's Order 3355 (August 31, 2017) established policy to prioritize infrastructure projects and streamline the environmental review process.
3. Section 211 of the Energy Policy Act of 2005 established a goal for the Department of the Interior to approve non-hydropower renewable energy projects on the public lands with at least 10,000 MWs of capacity by 2015. To achieve and exceed this goal, the BLM has now authorized over 17,000 MWs of non-hydropower renewable energy projects. The BLM continues to prioritize renewable energy development on public lands.
4. Desert Quartzite is a covered project under Title 41 of Fixing America's Surface Transportation Act (FAST-41). FAST-41 established new coordination and oversight procedures for infrastructure projects being reviewed by Federal agencies. The intent of the act is to improve early coordination between government agencies, increase public transparency, and increase government accountability.

ES.2.2 CDCA Plan Amendment

The BLM's action also will include consideration of a concurrent amendment of the CDCA Plan. The CDCA Plan, while recognizing the potential compatibility of solar generation facilities on public lands, requires that all sites associated with power generation or transmission that are not identified in the CDCA Plan be added to it through the PA process.

The Record of Decision signed by Secretary of the Interior Ken Salazar for the Solar Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (the "Western Solar Plan") (BLM 2012) identified the DQSP ROW application area as part of the Riverside East Solar Energy Zone (SEZ) and thus, available for solar development for all but pending projects. Pending projects (such as the DQSP) still require a project-specific PA. Similarly, pursuant to Section II.3.2.4 of the Desert Renewable Energy Conservation Plan (DRECP), the DRECP does not apply to "[a] project that is proposed in a BLM SEZ and that is considered a 'pending project' under the Western Solar Plan (the project application was filed before June 30, 2009)." The initial project application was filed before June 30, 2009, the Project is located within a SEZ, and the amendments contemplated by the Desert Quartzite Solar PV proposal either do not affect the project boundaries (e.g., change in project developer) or are related to avoiding resource or land use conflicts or adapting the Project to third-party-owned infrastructure constraints. Therefore, the Desert Quartzite Solar PV proposal is being processed under the CDCA land use plan decisions in place prior to the adoption of the DRECP LUPA and Western Solar Plan. Therefore, if the BLM decides to approve the issuance of a ROW grant for the DQSP, a PA also would be required.

The Applicant did not directly request an amendment of the CDCA Plan. Nonetheless, because a PA would be required if the requested ROW were granted, BLM has determined, as documented in its March 6, 2015 Notice of Intent To Prepare an EIS for the DQSP and a Possible Amendment to the CDCA, that a PA must be considered as part of the Action analyzed in this Draft PA/EIS/EIR. The PA decisions considered in the Draft PA/EIS/EIR are:

- PA1: The CDCA Plan would be amended to identify the development footprint as suitable for the specific proposed type of solar energy use. This would be adopted if a ROW were granted for the Project, the Resource Avoidance Alternative, or the Reduced Project Alternative.
- PA2: The CDCA Plan would be amended to authorize the portion of the gen-tie corridor that is located outside of BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52. This would be adopted if a ROW were granted for the Project, the Resource Avoidance Alternative, or the Reduced Project Alternative.

If these two decisions are not taken, the CDCA Plan would not be amended. This would result if the No Action Alternative were selected.

The Western Solar Plan designates approximately 248,000 acres of BLM administered land as Solar Energy Zones (SEZs) in six southwestern states. These SEZs are designated as locations that are well suited for utility-scale production of solar energy, and where BLM would prioritize solar development on Federal lands. The Riverside East SEZ in eastern Riverside County consists of approximately 148,000 acres of land. The Project is located within the Riverside East SEZ, but it is not subject to the Western Solar Plan because it is a "pending project" (a project in a SEZ with an application filed before June 30, 2009).

ES.2.3 County and Applicant's Project Objectives

The purpose of the project is to construct and operate a solar energy facility using a low-profile, PV solar technology that maximizes the generation of a renewable and reliable source of electrical power consistent with Federal and state policies and plans designed to promote environmentally responsible development of affordable renewable energy projects and green

jobs in California. In furtherance of this purpose, the County and Project Applicant have set forth the following basic objectives for the proposed Project:

- To generate up to 450 MW of electricity using PV solar technology and sell that power at the most competitive, low-cost price.
- To locate the Project in a manner that maximizes operational efficiencies, furthers the objectives of landscape-level smart-siting planning efforts, avoids Desert Wildlife Management Areas, Areas of Critical Environmental Concern and National Conservation Lands where feasible, and minimizes water use, new linear developments, and environmental impacts in general.
- To minimize environmental impacts and land disturbance by, among other things, siting the facility on relatively flat, contiguous lands with high solar insolation, in close proximity to established utility corridors, existing transmission lines with available capacity to facilitate interconnection, and accessible roads.
- To assist, to the greatest extent possible, with achieving greenhouse gas (GHG) reduction objectives, including the requirements under SB X1-2 to increase the state's Renewable Portfolio Standard (RPS) to 33 percent by 2020 and under SB 350 to increase the state's RPS to 50 percent by 2030.
- To further the purpose of Secretarial Order 3285A1, establishing the development of environmentally responsible renewable energy as a priority for the Department of the Interior.
- To increase local short-term and long-term employment opportunities.
- To provide economic benefits to Riverside County, in accordance with Policy B-29 and the motivations for its adoption, by stimulating spending at local businesses, increasing tax revenues, and generating development fees.

ES.3 Summary Description of the Proposed Action and Alternatives

The DQSP would be located approximately 2.75 miles southwest of the City of Blythe, just south of the Interstate 10 (I-10) freeway, and 1.5 miles southwest of Blythe Airport in Riverside County, California (Figure 2-1). The Project area associated with the Proposed Action (Alternative 1) after construction would occupy 3,616 acres of BLM land, and 154 acres of private land under the jurisdiction of the County of Riverside. The BLM land would include 3,560 acres for the solar facility, 54 acres for the 2.79-mile long gen-tie line, and 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land. The Project would include 61 acres of temporary construction areas, all on BLM land, for the solar arrays and gen-tie line. Additional appurtenances to be constructed on the Project area would include an Operations and Maintenance (O&M) building, On-Site Substation, internal access roads, and ancillary facilities. The primary ingress and egress to the Project would use existing access roads. The secondary access route would require construction of approximately 0.7 miles of new road near the southeastern boundary of the Project.

In addition to the Proposed Action (Alternative 1), the Draft PA/EIS/EIR also analyzes alternatives to the Project, including a Resource Avoidance Alternative that would support a 450 MW solar PV facility (Alternative 2), a Reduced Project Alternative that would support a 285

MW solar PV facility (Alternative 3), and a No Action Alternative (Alternative 4) as required by NEPA and CEQA.

The Resource Avoidance Alternative was developed to specifically avoid the locations of cultural and biological resources, as well as drainages and watercourses. The Resource Avoidance Alternative would generate up to 450 MW, and would occupy a land area of 2,782 acres, including 2,622 acres on BLM land and 160 acres of private land. Under the Resource Avoidance Alternative, the length of the gen-tie line would be 4.18 miles.

The Reduced Project Alternative further reduces the acreage of the solar arrays, with elimination of the proposed solar arrays primarily in the northern portion of the area to maintain habitat for the Mojave fringe-toed lizard and Harwood's eriastrum, a BLM Sensitive Species plant. The Reduced Project Alternative would generate 285 MW, and would occupy a land area of 2,047 acres, including 1,887 acres on BLM land and 160 acres of private land. Under the Reduced Project Alternative, the length of the gen-tie line would be 4.18 miles.

Under the No Action Alternative, the BLM would deny the Applicant's ROW grant application and no PA would be required.

ES.4 Public Involvement, Consultation, and Coordination

ES.4.1 Scoping

The BLM and County solicited internal and external input on the issues, impacts, and potential alternatives to be addressed in the Draft PA/EIS/EIR for the Project, as well as the extent to which those issues and impacts would be analyzed in the document. The NOI for the Proposed Action was published in the Federal Register on March 6, 2015 (80 FR 12195). The Notice of Preparation (NOP) was issued on March 13, 2015. Both the NOI and the NOP announced the dates, times, and locations of public scoping meetings in Parker, Arizona on March 23, 2015, and in Blythe, California, on March 24, 2015. The purpose of the meetings was to inform the public about the Project; describe the purpose and need of the Project; provide information regarding the environmental review process; and gather public input regarding the scope and content of the Draft PA/EIS/EIR. A total of six individuals made public comments at the meetings. The comment period for the NOI and NOP began on March 6, 2015, and ended on April 13, 2015. A total of nine written comment letters were submitted to BLM, 13 written comment letters were submitted to the County, and four comments letters were jointly submitted to both agencies.

Comments received during the scoping process are provided in Appendix H, *Public Scoping Report*, and raised the following issue topics:

- Air Quality
- Alternatives
- Biological Resources
- BLM Procedures
- Cultural Resources
- Environmental Justice and Impacted Communities
- Fire

- Global Climate Change
- Hazardous Materials/Hazardous Waste/Solid Waste
- Indirect and Cumulative Impacts
- Land Use
- Public Health
- Purpose and Need
- Tribal Governments
- Visual Resources
- Water Resources

ES.4.2 Consultation and Coordination

Pursuant to the Endangered Species Act, Section 7 consultation requirements (16 U.S.C. § 1531 et seq.), the BLM will initiate consultation by submitting a Biological Assessment (BA) to the US Fish and Wildlife Service (USFWS). BLM held a meeting with the USFWS regarding mitigation of impacts to biological resources on March 17, 2015 at the BLM Palm Springs-South Coast Field Office. BLM will continue to consult with the USFWS, which is expected to issue a Biological Opinion (BO) that will specify required measures for protection of Federally-threatened and endangered species.

Pursuant to the National Historic Preservation Act, Section 106 (16 U.S.C. §470), the BLM has coordinated and consulted with potentially affected Indian tribes regarding the Project. Reasonable and good faith efforts undertaken by the BLM to consult and coordinate with the tribes for the Project to date have included written correspondence, meetings for the purposes of information and idea exchange, cultural resource-focused site visits, and responses to information requests. BLM held a field visit with the Colorado River Indian Tribes on June 10, 2015, with three members and one elder in attendance. BLM sent a letter to the potentially affected Indian tribes in April, 2016, announcing the availability of the Class III Archaeological Survey Report. The BLM also responded to a request from the Ft. Yuma Quechan Tribe by holding meeting at the site on June 9, 2016 with four members of the Cultural Resources Committee.

BLM also has undertaken interagency coordination with a number of agencies including the U.S. Environmental Protection Agency, U.S. Department of Defense, U.S. Army Corps of Engineers, California Department of Fish and Wildlife, State Water Resources Control Board/Colorado River Regional Water Quality Control Board, State Historic Preservation Office, Riverside County, and Native American Heritage Commission.

ES.5 Environmental Consequences

Table ES-1 summarizes the environmental impacts that would occur as a result of the Proposed Action and Alternatives by environmental resource. Table ES-2 summarizes the significance of impacts under CEQA.

Table ES-1. Comparison of Impacts by Alternative

Resource	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action Alternative
Air Resources				
Construction and Decommissioning Emissions	Potential temporary exceedances of the Mojave Desert Air Quality Management District (MDAQMD) daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$, the PM_{10} *de minimis* level, and state and Federal Ambient Air Quality Standards (AAQS) for PM_{10} in a non-attainment area.	Potential temporary exceedances of the MDAQMD daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$, the PM_{10} *de minimis* level, and state and Federal AAQS for PM_{10} in a non-attainment area.	Potential temporary exceedances of the MDAQMD daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$, the PM_{10} *de minimis* level, and state and Federal AAQS for PM_{10} in a non-attainment area.	No emissions
Potential health impacts to sensitive receptors and workers	No sensitive receptors within 1,000 feet. Low potential for worker exposure to valley fever through exposure to dust.	No sensitive receptors within 1,000 feet. Low potential for worker exposure to valley fever through exposure to dust.	No sensitive receptors within 1,000 feet. Low potential for worker exposure to valley fever through exposure to dust.	No potential impacts
Operation and Maintenance Emissions	No exceedances	No exceedances	No exceedances	No emissions
Biological Resources – Vegetation				
Parkinsonia florida-Olneya tesota alliance	0 acres	0 acres	0 acres	0 acres
Larrea tridentata and *Larrea tridentata-Ambrosia dumosa* Alliances	3,575 acres	2,607 acres	1,872 acres	0 acres
Pleuraphis rigida alliance	40.4 acres	14 acres	14 acres	0 acres
State jurisdictional waters and wetlands	26.2 acres	0.39 acres	0.36 acres	0 acres
Federal jurisdictional waters and wetlands	0 acres	0 acres	0 acres	0 acres
Abrams' spurge	21 individuals	1 individuals	0 individuals	0 individuals
Desert unicorn-plant	584 individuals	300 individuals	315 individuals	0 individuals
Harwoods eriastrum	510 individuals	77 individuals	77 individuals	0 individuals

Table ES-1. Comparison of Impacts by Alternative

Resource	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action Alternative
Harwood's eriastrum (habitat)	110 acres of occupied habitat 3,660 acres of potential habitat	35 acres of occupied habitat 2,747 acres of potential habitat	34 acres of occupied habitat 2,013 acres of potential habitat	0 acres of occupied habitat 0 acres of potential habitat
Harwoods milkvetch	10,420 individuals	9,507 individuals	9,507 individuals	0 individuals
Ribbed cryptantha	64,234 individuals	30,178 individuals	30,178 individuals	0 individuals
Utah vine milkweed	0 individuals	0 individuals	0 individuals	0 individuals
Biological Resources – Wildlife				
Long-term habitat disturbance	3,770 acres	2,782 acres	2,047 acres	0 acres
Temporary habitat disturbance[1]	61 acres	64 acres	65 acres	0 acres
Mojave desert tortoise (tracks)	1 individuals	1 individuals	1 individuals	0 individuals
Mojave desert tortoise (habitat)	3,575 acres	2,607 acres	1,872 acres	0 acres
Mojave fringe-toed lizard (individuals)	135 individuals	30 individuals	30 individuals	0 individuals
Mojave fringe-toed lizard (habitat)	78 acres of occupied habitat 3,692 acres of potential habitat	16 acres of occupied habitat 2,766 acres of potential habitat	16 acres of occupied habitat 2,031 acres of potential habitat	0 acres of occupied habitat 0 acres of potential habitat
Kit fox (den)	6 dens	5 dens	5 dens	0 dens
Burrowing owl/American badger/kit fox (habitat)	3,831 acres	2,845 acres	2,112 acres	0 acres
Golden eagle (foraging habitat)	3,831 acres	2,845 acres	2,112 acres	0 acres
Cultural Resources				
National Register of Historic Places (NRHP)- and California Register of Historical Resources (CRHR)-Eligible archaeological resources directly adversely affected	9 sites	0 sites	0 sites	0 sites

Table ES-1. Comparison of Impacts by Alternative

Resource	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action Alternative
NRHP- and CRHR-Eligible archaeological resources indirectly adversely affected	0 sites	0 sites	0 sites	0 sites
Environmental Justice				
Disproportionate effects on Environmental Justice populations	No effect	No effect	No effect	No effect
Geology and Soils				
Geologic hazards	Minor risk from seismic hazards, subsidence and settlement, and hydrocompaction. Minor risk from corrosive soils.	Minor risk from seismic hazards, subsidence and settlement, and hydrocompaction. Minor risk from corrosive soils.	Minor risk from seismic hazards, subsidence and settlement, and hydrocompaction. Minor risk from corrosive soils.	No risk
Disturbed soils potentially eroded	3,831 acres	2,845 acres	2,112 acres	0 acres
Global Climate Change[2]				
CO_{2e} emissions avoided by displacing gas-fired generation	787,500 MT CO_2e/year	787,500 MT CO_2e/year	496,125 MT CO_2e/year	0 MT CO_2e/year
Total project annualized CO_2e emissions	1,280 MT CO_2e/year	1,280 MT CO_2e/year	1,261 MT CO_2e/year	0 MT CO_2e/year
Loss of carbon uptake	5,670 MT CO_2e/year	4,211 MT CO_2e/year	3,126 MT CO_2e/year	0 MT CO_2e/year
Hazards and Hazardous Materials				
Release of hazardous materials	Potential releases of fuels and other hazardous materials could result in soil and/or groundwater contamination.	Potential releases of fuels and other hazardous materials could result in soil and/or groundwater contamination.	Potential releases of fuels and other hazardous materials could result in soil and/or groundwater contamination.	No risk
Site security	Mitigated minor security risks, "low vulnerability" site	Mitigated minor security risks, "low vulnerability" site	Mitigated minor security risks, "low vulnerability" site	No risk

Table ES-1. Comparison of Impacts by Alternative

Resource	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action Alternative
Civil Aviation safety	Airport Compatibility Zone E overlain by 424 acres of solar array, 0 miles of gen-tie line. Potential glint and glare from PV panels.	Airport Compatibility Zone E overlain by 311 acres of solar array, 1.08 miles of gen-tie line. Potential glint and glare from PV panels.	Airport Compatibility Zone E overlain by 56 acres of solar array, 1.08 miles of gen-tie line. Potential glint and glare from PV panels.	No effect
DoD Aviation Safety	No impact to Special Use Airspace (SUAs) or Military Training Routes (MTRs)	No impact to SUAs or MTRs.	No impact to SUAs or MTRs.	No effect
Lands and Realty				
Impacts to authorized uses	None	None	None	None
Nonconformance with CDCA Plan	None	None	None	None
Nonconformance with Multiple Use Class M guidelines	None	None	None	None
Restriction of MUC-M land use opportunities	3,616 acres	2,622 acres	1,887 acres	0 acres
Mineral Resources				
Potential impact to mineral extraction[3]	3,616 acres	2,622 acres	1,887 acres	0 acres
Noise				
Construction and decommissioning noise	Noise levels at nearest sensitive receptor may increase beyond the 10 dBA standard. Impact would be mitigated by orienting post installation equipment.	Noise levels at nearest sensitive receptor may increase beyond the 10 dBA standard. Impact would be mitigated by orienting post installation equipment.	Noise levels at nearest sensitive receptor may increase beyond the 10 dBA standard. Impact would be mitigated by orienting post installation equipment.	No impact
Operations noise	Noise levels at nearest sensitive receptor would not increase beyond the 10 dBA standard.	Noise levels at nearest sensitive receptor would not increase beyond the 10 dBA standard.	Noise levels at nearest sensitive receptor would not increase beyond the 10 dBA standard.	No impact

Table ES-1. Comparison of Impacts by Alternative

Resource	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action Alternative
Paleontological Resources				
Potential disturbance of significant vertebrate fossils	Largest area of Project overlies unit of Potential Fossil Yield Classification (PFYC) 5a (Very High), and Society of Vertebrate Paleontology (SVP) Category of High potential	Overall acreage reduced, but acreage on unit with highest potential would be same as Proposed Action	Overall acreage reduced, but acreage on unit with highest potential would be same as Proposed Action	No impact
Recreation				
Direct removal of land area for recreation	3,616 acres	2,622 acres	1,887 acres	0 acres
Displacement of open OHV routes	Requires closure of six routes or 6.8 miles	Requires closure of six routes or 6.8 miles	Requires closure of six routes or 6.5 miles	No impact
Social and Economic Issues[4]				
Construction jobs (direct, indirect, and induced)	893 jobs	893 jobs	893 jobs	0 jobs
Operations jobs (direct, indirect, and induced)	10.7 jobs	10.7 jobs	10.7 jobs	0 jobs
Sales tax revenue to Riverside County (construction)	$864,000	$864,000	$864,000	$0
Riverside County Negotiated Development Agreement	$565,000/year	$439,500/year	$299,400/year	$0
Property tax revenue to Riverside County[1]	$15,800/year	$20,000/year	$20,000/year	$0
Annual beneficial economic impact during construction	$72.5 million	$72.5 million	$72.5 million	$0
Annual beneficial economic impact during operations	$3 million	$3 million	$3 million	$0
Special Designations				
Direct impacts to ACECs, wilderness areas, and lands with wilderness characteristics	No impact	No impact	No impact	No impact

Table ES-1. Comparison of Impacts by Alternative

Resource	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action Alternative
Transportation and Traffic				
Construction impacts on local roadways (Interstate 10 and State Route 78)	No impact	No impact	No impact	No impact
Construction impacts on local intersections	Adverse impact, would not conform with Riverside County General Plan	Adverse impact, would not conform with Riverside County General Plan	Adverse impact, would not conform with Riverside County General Plan	No impact
Operations impacts on local roadways (Interstate 10 and State Route 78)	No impact	No impact	No impact	No impact
Operations impacts on local intersections	No impact	No impact	No impact	No impact
Impacts of parking demand	No impact	No impact	No impact	No impact
Utilities and Public Services				
Public services	No impact	No impact	No impact	No impact
Visual Resources				
Construction dust	Construction dust may temporarily affect the visual quality of the area	Construction dust may temporarily affect the visual quality of the area	Construction dust may temporarily affect the visual quality of the area	No impact
Nighttime construction lighting	Lights may be visible, but would be minimized to not be a nuisance or affect viewers of the night sky	Lights may be visible, but would be minimized to not be a nuisance or affect viewers of the night sky	Lights may be visible, but would be minimized to not be a nuisance or affect viewers of the night sky	No impact
Glint and glare	Glare may temporarily occur, but is unlikely to be visually distracting or a nuisance	Glare would be less likely, and less prominent, than Alternative 1 due to reduced acreage of solar arrays	Glare would be less likely, and less prominent, than Alternatives 1 and 2 due to reduced acreage of solar arrays	No impact
Visual contrast in form, line, color, and texture	Strong visual contrast at two KOPs, and moderate visual contrast at one KOP	Strong visual contrast at two KOPs, and moderate visual contrast at one KOP	Strong visual contrast at two KOPs, and moderate visual contrast at one KOP	No impact
Water Resources				
Erosion and drainage	Disturbance of drainage over 3,831 acres	Disturbance of drainage over 2,845 acres	Disturbance of drainage over 2,112 acres	Disturbance of drainage over 0 acres

Table ES-1. Comparison of Impacts by Alternative

Resource	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action Alternative
Annual groundwater consumption during construction	700 acre-feet per year (AFY) over 25 month construction period, 450 AFY over 48-month period	700 AFY over 25 month construction period, 450 AFY over 48-month period	700 AFY over 25 month construction period, 450 AFY over 48-month period	0 AFY
Annual operational water consumption	38 AFY	38 AFY	38 AFY	0 AFY
Wildland Fire				
Impacts on fire regime	Increased vehicle traffic/human presence may directly result in fire. Potential for spread of invasive weeds may increase fire risk.	Increased vehicle traffic/human presence may directly result in fire. Potential for spread of invasive weeds may increase fire risk.	Increased vehicle traffic/human presence may directly result in fire. Potential for spread of invasive weeds may increase fire risk.	No impact

Notes:
1 – Although the overall acreage of the Project is smaller under Alternatives 2 and 3 versus Alternative 1, the gen-tie line would be longer under Alternatives 2 and 3 than under Alternative 1. Some tax revenues are based on length of the gen-tie line, so are therefore higher under Alternatives 2 and 3 than under Alternative 1.
2 – See Section 4.8 for GHG calculation methodology.
3 - Under Public Land Order No. 7818, the Riverside East SEZ was withdrawn from location and entry under the United States mining laws, subject to valid existing rights, for a period of 20 years. The lands remain open to mineral and geothermal leasing, and mineral material sales.
4 – See Section 4.15 for socioeconomic calculation methodology.

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
Air Resources			
AIR-1) Conflict with or obstruct implementation of the applicable air quality attainment or maintenance plan.	All Alts. - NA	-	-
AIR-2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation when added to the local background.	Alts. 1, 2, 3 – SU Alt. 4 – NI	Alts. 1, 2, 3 - AQ-1, AQ-2, TRN-4	Alts. 1, 2, 3 – SU
AIR-3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).	Alts. 1, 2, 3 – SU Alt. 4 – NI	Alts. 1, 2, 3 - AQ-1, AQ-2, TRN-4	Alts. 1, 2, 3 – SU
AIR-4) Expose sensitive receptors to substantial pollutant concentrations including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1. As defined in the MDAQMD's CEQA Guidelines, sensitive receptors include land uses associated with residences, schools, daycare centers, playgrounds, and medical facilities. The following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated using CEQA Significance Criterion AIR-4: • Any industrial project within 1,000 feet; • A distribution center (40 or more trucks per day) within 1,000 feet; • A major transportation project (50,000 or more vehicles per day) within 1,000 feet; • A dry cleaner using perchloroethylene within 500 feet; or • A gasoline dispensing facility within 300 feet.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
AIR-5) Create objectionable odors affecting a substantial number of people.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
AIR-6) Expose sensitive receptors that are located within one mile of the Project site to substantial point source emissions.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
AIR-7) Involve the construction of a sensitive receptor located within one mile of an existing substantial point source emitter.	Alts. 1, 2, 3, 4 - NI	-	-

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
Biological Resources			
BIO-1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – VEG-1, VEG-2, VEG-3, VEG-4, VEG-5, VEG-6, VEG-7, VEG-8, VEG-9, VEG-10	Alts. 1, 2, 3 – LTS
BIO-2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.	Alts. 1, 2, 3, 4 - NI	-	-
BIO-3) Have a substantial adverse effect on Federal protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marshes, vernal pools, and coastal areas) or any state-protected jurisdictional areas not subject to regulation under Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – VEG-10	Alts. 1, 2, 3 – LTS
BIO-4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WIL-1, WIL-4, WIL-9, WIL-12, WIL-13	Alts. 1, 2, 3 – LTS
BIO-5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Alts. 1, 2, 3, 4 - NI	-	-
BIO-6) Conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan.	All Alts. - NA	-	-
BIO-7) Substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
Cultural Resources			
CUL-1) Cause a substantial adverse change in the significance of a historical resource as defined in Code of Regulations Section 15064.5.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – CULTURAL-1 through CULTURAL-7	Alts. 1, 2, 3 – LTS

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
CUL-2) Cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations Section 15064.5.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – CULTURAL-1 through CULTURAL-7	Alts. 1, 2, 3 – LTS
CUL-3) Disturb any human remains, including those interred outside of formal cemeteries.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – CULTURAL-3	Alts. 1, 2, 3 – LTS
TCR-1) Would the Project cause a substantial adverse change in the significance of a Tribal Cultural Resource that is listed or eligible for listing in the California Register of Historical Resources?	Alt. 1 – S Alts 2, 3, 4 - NI	Alt. 1 – CULTURAL-1, CULTURAL-6	Alt. 1 – LTS
TCR-2) Would the Project cause a substantial adverse change in a resource identified through consultation with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project?	Alts. 1, 2, 3, 4 - NI	-	-
Geology and Soils			
GEO-1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving: a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. b) Strong Seismic ground shaking. c) Seismic-related ground failure, including liquefaction. d) Landslides.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – GEO-1	Alts. 1, 2, 3 – LTS
GEO-2) Result in substantial soil erosion or the loss of topsoil.	Alts. 1, 2, 3 – S (wind erosion) Alt. 4 - NI	Alts. 1, 2, 3 – AQ-1	Alts. 1, 2, 3 – LTS
GEO-3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – GEO-1	Alts. 1, 2, 3 – LTS
GEO-4) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life and property.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – GEO-1	Alts. 1, 2, 3 – LTS
GEO-5) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – GEO-1	Alts. 1, 2, 3 – LTS

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
GEO-6) Be subject to geologic hazards, such as seiche, mudflow, or volcanic hazard.	All Alts. - NA	-	-
GEO-7) Change topography or ground surface relief features.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
GEO-8) Create cut or fill slopes greater than 2:1 or higher than 10 feet.	All Alts. - NI	-	-
GEO-9) Result in grading that affects or negates subsurface sewage disposal systems.	All Alts. - NI	-	-
GEO-10) Change deposition, siltation, or erosion that may modify the channel of a river or stream or the bed of a lake.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WATER-1, WATER-2	Alts. 1, 2, 3 – LTS
GEO-11) Result in any increase in water erosion either on- or off-site.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WATER-1, WATER-2	Alts. 1, 2, 3 – LTS
GEO-12) Be impacted by or result in an increase in wind erosion and blowsand, either on- or off-site.	Alts. 1, 2, 3 – S (wind erosion) Alt. 4 - NI	Alts. 1, 2, 3 – AQ-1	Alts. 1, 2, 3 – LTS
GEO-13) Be an incompatible land use located adjacent to a state classified or designated area or existing surface mine.	All Alts. - NA	-	-
GEO-14) Expose people or property to hazards from proposed, existing or abandoned quarries or mines.	All Alts. - NI	-	-
Greenhouse Gas Emissions			
GHG-1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Alts. 1, 2, 3 – LTS/B Alt. 4 - S	Alt. 4 - None	-
GHG-2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Alts. 1, 2, 3 – B Alt. 4 - S	Alt. 4 - None	-

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
Hazards and Hazardous Materials			
HAZ-1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – HAZ-1, HAZ-2, WATER-1	Alts. 1, 2, 3 – LTS
HAZ-2) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – HAZ-1, HAZ-2, WATER-1	Alts. 1, 2, 3 – LTS
HAZ-3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	All Alts. - NI	-	-
HAZ-4) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment	All Alts. - NI	-	-
HAZ-5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard for people residing or working in the project area.	Alts. 1, 2, 3 – S (FAA) Alts. 1, 2, 3 – LTS (RCALUCP) Alt. 4 – NI (FAA and RCALUCP)	Alts. 1, 2, 3 – HAZ-3 (FAA)	Alts. 1, 2, 3 – LTS
HAZ-6) For a project within the vicinity of a private airstrip, would result in a safety hazard for people residing or working in the project area.	All Alts. - NI	-	-
HAZ-7) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	All Alts. - NI	-	-
HAZ-8) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	All Alts. - NI	-	-
HAZ-9) Result in an inconsistency with an Airport Master Plan.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
HAZ-10) Require review by the Airport Land Use Commission.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
Lands, Realty, and Agricultural and Forestry Resources			
LU-1) Physically divide an established community.	All Alts. - NI	-	-
LU-2) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
LU-3) Conflict with any applicable habitat conservation plan or natural community conservation plan.	All Alts. - NA	-	-
LU-4) Result in a substantial alteration of the present or planned land use of an area.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
LU-5) Affect land use within a city sphere of influence and/or within adjacent city or county boundaries.	All Alts. - NI	-	-
LU-6) Be inconsistent with the site's existing or proposed zoning.	All Alts. - NI	-	-
LU-7) Be incompatible with existing surrounding zoning.	All Alts. - NI	-	-
LU-8) Disrupt or divide the physical arrangement of an established community (including a low income or minority community).	All Alts. - NI	-	-
AG-1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the map prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.	All Alts. - NI	-	-
AG-2) Conflict with existing zoning for agricultural use, or a Williamson Act contract.	All Alts. - NI	-	-
AG-3) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).	All Alts. - NI	-	-
AG-4) Result in the loss of forest land or conversion of forest land to non-forest use.	All Alts. - NI	-	-

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
AG-5) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.	All Alts. - NI	-	-
AG-6) Conflict with land within a Riverside County Agricultural Preserve.	All Alts. - NI	-	-
AG-7) Cause development of non-agricultural uses within 300 feet of agriculturally zoned property (Ordinance No. 625, "Right-to-Farm").	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
Mineral Resources			
MR-1) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.	All Alts. - NI	-	-
MR-2) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	All Alts. - NI	-	-
MR-3) Be an incompatible land use located adjacent to a state classified or designated area or existing surface mine.	All Alts. - NI	-	-
MR-4) Expose people or property to hazards from proposed, existing or abandoned quarries or mines.	All Alts. - NI	-	-
Noise			
NOI-1) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	All Alts. - NI	-	-
NOI-2) Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
NOI-3) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
NOI-4) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the exposure of people residing or working in the project area to excessive noise levels.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
NOI-5) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
NOI-6) For a project within the vicinity of a private airstrip, the exposure of people residing or working in the project area to excessive noise levels.	All Alts. - NI	-	-
NOI-7) Impacts from railroad or highway noise.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
Paleontological Resources			
PALEO-1) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
Recreation and Public Access			
REC-1) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – REC-3	Alts. 1, 2, 3 – LTS
REC-2) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	All Alts. - NI	-	-
REC-3) Located within a Community Service Area (CSA) or recreation and park district with a Community Parks and Recreation Plan (Quimby fees).	All Alts. - NI	-	-
Social and Economic Effects			
SOC-1) Induce substantial population growth in an area, either directly or indirectly.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
SOC-2) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.	All Alts. - NI	-	-
SOC-3) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.	All Alts. - NI	-	-

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
SOC-4) Create a demand for additional housing, particularly housing affordable to households earning 80% or less of the County's median income.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
SOC-5) Affect a County Redevelopment Project Area.	All Alts. - NI	-	-
SOC-6) Cumulatively exceed official regional or local population projections.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
Transportation and Traffic			
TRA-1) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – TRN-3, TRN-4	Alts. 1, 2, 3 – LTS
TRA-2) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
TRA-3) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	All Alts. - NI	-	-
TRA-4) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	All Alts. - NI	-	-
TRA-5) Result in inadequate emergency access.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – TRN-4	Alts. 1, 2, 3 – LTS
TRA-6) Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
TRA-7) Alter waterborne, rail or air traffic.	All Alts. - NI	-	-
TRA-8) Cause an effect, or a need for new or altered maintenance of roads.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – REC-1, TRN-4	Alts. 1, 2, 3 – LTS

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
TRA-9) Cause an effect upon circulation during the project's construction.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – TRN-3, TRN-4	Alts. 1, 2, 3 – LTS
TRA-10) Affect bike trails.	All Alts. - NI	-	-
Utilities and Public Services			
USS-1) Result in substantial adverse environmental impacts associated with the provision of utility services. Substantial adverse environmental impacts may occur if the Project would: 1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. 2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. 3. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. 4. Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements. 5. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments. 6. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs. 7. Fail to comply with Federal, state, and local statutes and regulations related to solid waste.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
PS-1) Result in substantial adverse physical impacts associated with the provision of new or physically altered facilities to provide public services.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
USS-2) Impact the following facilities requiring or resulting in the construction of new facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects. 1. Electricity 2. Natural gas 3. Communications systems 4. Stormwater drainage 5. Street lighting 6. Maintenance of public facilities, including roads 7. Other government services	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – REC-1, TRN-4	Alts. 1, 2, 3 – LTS
USS-3) Conflict with any adopted energy conservation plans.	All Alts. - NI	-	-
Visual Resources			
VIS-1) Have a substantial adverse effect on a scenic vista.	All Alts. - NI	-	-
VIS-2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
VIS-3) Substantially degrade the existing visual character or quality of the site and its surroundings.	Alts. 1, 2, 3 – SU Alt. 4 - NI	Alts. 1, 2, 3 – VIS-1, VIS-2, VIS-3, VIS-4	Alts. 1, 2, 3 – SU
VIS-4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
VIS-5) Result in the creation of an aesthetically offensive site open to public view.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
VIS-6) Interfere with nighttime use of the Mt. Palomar Observatory, as protected through Riverside County Ordinance No. 655.	All Alts. - NI	-	-

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
VIS-7) Expose residential property to unacceptable light levels.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
Water Resources			
HYD-1) Violate any water quality standards or waste discharge regulations.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WATER-1, WATER-2	Alts. 1, 2, 3 – LTS
HYD-2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WATER-4	Alts. 1, 2, 3 – LTS
HYD-3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WATER-1, WATER-2	Alts. 1, 2, 3 – LTS
HYD-4) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WATER-1, WATER-2, WATER-3	Alts. 1, 2, 3 – LTS
HYD-5) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WATER-1, WATER-2	Alts. 1, 2, 3 – LTS
HYD-6) Otherwise substantially degrade water quality.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WATER-4	Alts. 1, 2, 3 – LTS
HYD-7) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.	All Alts. - NI	-	-
HYD-8) Place within a 100-year flood hazard area structures which would impede or redirect flood flows.	All Alts. - NI	-	-
HYD-9) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	All Alts. - NI	-	-

Table ES-2. Summary of Impact Significance under CEQA

Potential Impact	CEQA Significance Before Mitigation[1]	Mitigation	CEQA Significance After Mitigation
HYD-10) Be at risk of inundation by seiche, tsunami, or mudflow.	All Alts. - NI	-	-
HYD-11) Include new or retrofitted Stormwater Treatment Control BMPs (e.g., water quality treatment basins, constructed treatment wetlands), the operation of which could result in significant environmental effects (i.e., increased vectors and/or odors).	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
HYD-12) Cause changes in absorption rates or the rate and amount of surface runoff.	Alts. 1, 2, 3 – S Alt. 4 - NI	Alts. 1, 2, 3 – WATER-1, WATER-2	Alts. 1, 2, 3 – LTS
HYD-13) Cause changes in the amount of surface water in any water body.	Alts. 1, 2, 3 – LTS Alt. 4 - NI	-	-
Wildland Fire			
Fire-1) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	All Alts. - NI	-	-

1 - SU – Significant and unavoidable
LTS – Less than significant
S – Significant
NI – No impact
B – Beneficial
NA – Not applicable

CHAPTER 1
INTRODUCTION AND PURPOSE AND NEED

1.1 Introduction

This Draft Proposed Plan Amendment (PA) to the California Desert Conservation Area (CDCA) Plan/Environmental Impact Statement/Environmental Impact Report (Draft PA/EIS/EIR) analyzes impacts of the Desert Quartzite Solar Project (DQSP; the Project), which is first described in the right-of-way (ROW) grant application number CACA-049397 filed with the Bureau of Land Management (BLM) by First Solar Development, LLC (the Applicant), a wholly-owned subsidiary of First Solar Development, Inc. The ROW grant application was originally filed for 7,245 acres on September 28, 2007, but has been revised several times. The current Project is described in the most recent POD, dated November 15, 2016. The Applicant has also filed a Conditional Use Permit Application (Application for Land Use and Development, Form 295-1010) to Riverside County (the County) for an additional 160 acres of privately-owned land adjacent to the BLM-administered land.

The total Project area now under application for BLM and County approval is approximately 5,275 acres. Of this, the application for the BLM ROW grant includes approximately 5,115 acres of BLM administered lands, and the application for a County Conditional Use Permit includes 160 acres of private lands. Within this application area, the Applicant has proposed a Project which would occupy approximately 3,770 acres, including 3,560 acres for portion of the solar facility on BLM land, 54 acres for the proposed 230 kilovolt (kV) transmission line (generation interconnection [gen-tie] line) on BLM land, 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land, and 154 acres for the portion of the solar facility on private land. The larger acreage under application allows for the BLM and the County to consider various site layouts as Project alternatives for their environmental analysis. The final post-construction ROW grant for the Project would be 3,616 acres of BLM land, and the County authorization for use of the private land would be 154 acres. The larger acreage under application allows for BLM and the County to consider various site layouts as Project alternatives for their environmental analysis. In addition to the long-term Project ROW area, the Project would include 61 acres of temporary construction areas on BLM land outside of the ROW area. The combined acreage of the BLM and County authorizations would total 3,831 acres, and the remaining area within the application boundary would not be incorporated as part of the Project.

The Regional Context of the Project is shown in Figure 1-1 (see Appendix A for all figures referenced in the Draft PA/EIS/EIR); the Project Location, Proposed Site Layout, and Solar Unit Detail are shown in Figures 2-1, 2-2, and 2-3.

The Draft PA/EIS/EIR evaluates the potential effects of the Proposed Action and two other alternatives on BLM-administered lands and privately-owned lands under the County's jurisdiction. A number of other alternatives to the Proposed Action were developed and evaluated by the BLM but ultimately not carried forward for detailed analysis (see Section 2.9 for further information). These include alternative sites, other solar and renewable technologies, generation technologies using different fuels, and conservation and demand-side management. Of the alternatives considered, four alternatives were determined by the BLM to warrant detailed analysis: Alternative 1, the Proposed Action that would generate up to 450 megawatts (MW);

Alternative 2, a Resource Avoidance Alternative that would generate up to 450 MW; Alternative 3, a Reduced Project Alternative that would generate up to 285 MW; and Alternative 4, the No Action Alternative.

Acronyms used in this document are defined in Appendix B, which also includes a glossary of various terms used in this document. The references used in this document are listed in Appendix C.

1.2 Joint NEPA/CEQA Document

This Draft PA/EIS/EIR was prepared as a joint Federal/state environmental document (State Clearinghouse Number 2015031066 and EIS Number DOI-BLM-CA-D060-2017-0002). This document analyzes the effects of the proposed Project solar facility site and gen-tie line corridor, and Alternatives.

1.2.1 NEPA Environmental Impact Statement

The National Environmental Policy Act (NEPA) requires the preparation of an EIS for all "major Federal actions significantly affecting the quality of the human environment" 42 U.S.C. §4332(2)(C). The ROW grant for the proposed solar facility and associated gen-tie line would be located on BLM-managed lands and triggers the need for environmental review with BLM as the NEPA lead agency. In accordance with NEPA (42 U.S.C. § 4321 et seq.); Council on Environmental Quality's (CEQ) NEPA regulations (40 Code of Federal Regulations (CFR) §1502.13); the DOI's NEPA regulations, 43 CFR Part 46; the BLM NEPA Handbook, H-1790-1; FLPMA Sections 201, 202, and 206, (43 U.S.C. §§ 1711, 1712, 1716; 43 CFR Part 1600); and the BLM Land Use Planning Handbook, H-1601-1, this joint Draft PA/EIS/EIR (1) describes the affected environment relevant to potential impacts of the proposed action, action alternatives, and no action alternative; (2) evaluates the environmental impacts that are expected to result from construction, operation, maintenance, and decommissioning of the proposed solar facility and its alternatives in the BLM ROW; and (4) identifies and characterizes cumulative impacts that could result from the proposed action (and its action alternatives) in relation to other ongoing or reasonably foreseeable activities within the surrounding area. Additionally, this Draft PA/EIS/EIR presents recommended mitigation measures that, if adopted, would avoid, minimize, or otherwise mitigate for certain direct and indirect environmental impacts identified. The information contained in this Draft PA/EIS/EIR will be considered by the BLM in its deliberations regarding approval of the ROW grant, and may also be considered by other Federal agencies for use in decision-making to protect, preserve, and enhance the human environment and natural ecosystems.

1.2.2 CEQA Environmental Impact Report

Under the California Environmental Quality Act (CEQA), as amended (Public Resources Code Section 21080(a)), an environmental review document must be prepared, reviewed, and certified by the decision-making body before action is taken on any non-exempt discretionary project proposed to be carried out or approved by a state or local public agency in California. This Draft PA/EIS/EIR serves as the environmental review document that evaluates the potential environmental effects associated with implementation of the proposed Project. This Draft

PA/EIS/EIR has been prepared pursuant to CEQA (California Public Resources Code Section 21000 et seq.) and the state CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.).

The Draft PA/EIS/EIR will serve as an informational disclosure document for the County, responsible agencies, and other interested parties. The County will consider the conclusions of the Final PA/EIS/EIR, in light of the entire administrative record, before certifying the Final PA/EIS/EIR and taking action on the Project. The following are included among the stated purposes of an EIR in the state CEQA Guidelines:

- Disclose significant environmental impacts that are expected to result from the construction, operation, and maintenance of the proposed Project;
- Indicate ways in which significant impacts can be avoided or otherwise mitigated;
- Identify any unavoidable adverse impacts that cannot be mitigated; and
- Identify feasible alternatives to the Project that would substantially lessen or eliminate significant adverse impacts.

1.3 Purpose and Need

1.3.1 BLM Purpose and Need

NEPA guidance published by the Council on Environmental Quality (CEQ) states that an Environmental Impact Statement's Purpose and Need section "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action" (40 Code of Federal Regulations (CFR) §1502.13). It describes the BLM's purpose and need for action, which is informed by but distinct from the Applicant's interests and objectives.

The BLM's purpose and need for the Project is to respond to the Applicant's application under Title V of the Federal Land Policy and Management Act of 1976 (FLPMA) (43 USC §1761(a)(4)) for a ROW grant to construct, operate, maintain, and decommission a solar photovoltaic (PV) facility on public lands in compliance with FLPMA, BLM ROW regulations, and other applicable Federal laws, policies and plans. In accordance with §302(a) of FLPMA, public lands are to be managed for sustained yield and multiple uses that take into account the long-term needs of future generations for renewable and non-renewable resources. The Secretary of the Interior is authorized to grant rights-of-way on public lands for systems of generation, transmission, and distribution of electric energy (43 USC §1761(a)(4)). Taking into account BLM's sustained yield and multiple use mandates, the BLM will decide whether to approve, approve with modification(s), or deny issuance of a ROW grant to the Applicant for the proposed Project.

The Proposed Action, if approved, also would assist the BLM in addressing several management and policy objectives advanced through the following authorities and policies applicable to the BLM:

1. Executive Order 13783 (March 28, 2017) and Secretary's Order 3349 (March 29, 2017) establishes policy to promote clean and safe development of the energy resources within the United States.

2. Executive Order 13807 (August 15, 2017) and Secretary's Order 3355 (August 31, 2017) established policy to prioritize infrastructure projects and streamline the environmental review process.
3. Section 211 of the Energy Policy Act of 2005 established a goal for the Department of the Interior to approve non-hydropower renewable energy projects on the public lands with at least 10,000 MWs of capacity by 2015. To achieve and exceed this goal, the BLM has now authorized over 17,000 MWs of non-hydropower renewable energy projects. The BLM continues to prioritize renewable energy development on public lands.
4. Desert Quartzite is a covered project under Title 41 of Fixing America's Surface Transportation Act (FAST-41). FAST-41 established new coordination and oversight procedures for infrastructure projects being reviewed by Federal agencies. The intent of the act is to improve early coordination between government agencies, increase public transparency, and increase government accountability.

1.3.2 County and Applicant's Project Objectives

The purpose of the project is to construct and operate a solar energy facility using a low-profile, PV solar technology that maximizes the generation of a renewable and reliable source of electrical power consistent with Federal and state policies and plans designed to promote environmentally responsible development of affordable renewable energy projects and green jobs in California. In furtherance of this purpose, the County and Project Applicant have set forth the following basic objectives for the proposed Project:

- To generate up to 450 MW of electricity using PV solar technology and sell that power at the most competitive, low-cost price.
- To locate the Project in a manner that maximizes operational efficiencies, furthers the objectives of landscape-level smart-siting planning efforts, avoids Desert Wildlife Management Areas, Areas of Critical Environmental Concern and National Conservation Lands where feasible, and minimizes water use, new linear developments, and environmental impacts in general.
- To minimize environmental impacts and land disturbance by, among other things, siting the facility on relatively flat, contiguous lands with high solar insolation, in close proximity to established utility corridors, existing transmission lines with available capacity to facilitate interconnection, and accessible roads.
- To assist, to the greatest extent possible, with achieving greenhouse gas (GHG) reduction objectives, including the requirements under SB X1-2 to increase the state's Renewable Portfolio Standard (RPS) to 33 percent by 2020 and under SB 350 to increase the state's RPS to 50 percent by 2030.
- To further the purpose of Secretarial Order 3285A1, establishing the development of environmentally responsible renewable energy as a priority for the Department of the Interior.
- To increase local short-term and long-term employment opportunities.

- To provide economic benefits to Riverside County, in accordance with Policy B-29 and the motivations for its adoption, by stimulating spending at local businesses, increasing tax revenues, and generating development fees.

California's Renewable Energy Standards and Goals

California's RPS originally required California's investor-owned electric utilities to obtain 20 percent of the electricity that they supply from renewable sources by 2010. Executive Order S-14-08 expanded this goal, mandating that "all retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." State government agencies were furthermore directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines.

California's three large investor-owned utilities (Pacific Gas and Electric, San Diego Gas and Electric, and Southern California Edison) made quick progress toward meeting these goals, and by 2016, they collectively served 34.8 percent of their retail electricity sales with renewable power (CPUC 2017). In 2015, the Legislature and Governor accordingly raised the bar for renewable energy by mandating a 50% RPS by 2030 in SB 350.

California policy has mandated significant increases in renewable energy generation, including utility-scale solar facilities like the proposed Project, and requires that California utilities meet their electrical supply needs from both large central station power sources, and from distributed generation. "Utility scale power plants can take advantage of economies of scale early in the growth of new technologies. As of November, 2017, California has approximately 17,210 MW of CEC-installed utility-scale renewable energy capacity (CEC 2017).

Greenhouse Gas Reduction

California is committed to a significant and substantial increase in reliance on renewable resources for electrical power, the reduction of fossil-fuel based pollutants, and promoting the green economy, consistent with protection of the environment. The RPS embodies this commitment, but it is evident in other statutes and policies as well, in particular those policies that aim to reduce California's contribution of approximately 6.2 percent of the total United States GHG.

Former Governor Arnold Schwarzenegger issued Executive Order S-03-05 on climate change to advance renewable energy and to reduce California's GHG emissions. Further, in enacting the California Global Warming Solutions Act of 2006 (Assembly Bill 32), the Legislature found that global warming poses a serious threat to California's economic well-being, public health, natural resources, and environment. Aspiring to exercise a global leadership role, Assembly Bill 32 directed the California Air Resources Board (CARB) to develop regulations, market mechanisms, and other actions to reduce California's greenhouse gas emissions, such as carbon dioxide, to 1990 levels by 2020 (see Health and Safety Code, § 38501).

In fulfilling its duties under Assembly Bill 32, CARB determined that electricity generation accounts for approximately 22 percent of carbon dioxide (CO_2) emissions in California due to the burning of fossil fuel energy sources such as coal and natural gas. Renewable energy power plants are urgently needed to address the emissions and enable the state to meet its GHG

reduction objectives and RPS standard. The Project is anticipated to produce approximately 2.25 billion kilowatt hours (kWh) of electrical energy per year (URS 2015). The total annualized GHG emissions of the Project are approximately 1,280 metric tons (MT) CO_2 equivalent (CO_2e) per year, including 669 MT of amortized construction emissions, 277 MT CO_2e of corresponding operational emissions, and an estimated 334 MT CO_2e of annualized decommissioning emissions. In comparison, gas turbine and coal-fired power plants of the same electrical energy output are estimated to produce approximately 787,500 and 2,250,000 metric tons of CO_2e, respectively. The net GHG emission displacement or offset of the Project's solar facility in place of a conventional fossil-fuel combustion power plant is estimated to range from 786,220 to 2,248,720 MT CO_2e per year.

Proximity to Electrical Transmission Facilities

A major impediment to meeting the RPS is transmission line capacity and availability. California Independent System Operator (CAISO) manages the high-voltage transmission system and controls the process of obtaining rights to interconnect to the statewide grid. To obtain permission to interconnect with transmission facilities, an electric generator must submit an interconnection application to CAISO, which then places the electric generator into the "interconnection queue" and evaluates and apportions the cost of any associated transmission facility upgrades. Accordingly, a key driver in achieving the state's RPS is to locate renewable energy power plants where transmission capacity is expected to be available and sufficient queue position has been reserved by the electric generator, such that interconnection approvals can be granted within the near term.

The Project would be located approximately 3.0 miles from Southern California Edison's Colorado River Substation (CRSS), a component of the Devers-Palo Verde 2 (DPV2) Transmission Line project, which received its approval from the California Public Utilities Commission (CPUC) in July 2011 (Decision D.11-07-011) and was completed in September, 2013. A portion of the proposed 230 kV gen-tie line that is outside of the solar facility but part of the Project would be collocated in a utility corridor with gen-tie lines from other local solar power facilities.

High Potential Solar Resource Area

The Project site receives anywhere between 6.0 and 7.0 kWh per square meter per day (kWh/m2/day) of solar radiation energy, giving it a higher degree of solar radiation than most areas within the United States (NREL 2012). The BLM and Department of Energy prepared a Solar Energy Development Programmatic Environmental Impact Statement (PEIS; also known as the Western Solar Plan) that identified the Riverside East Solar Energy Zone (SEZ), of which the Project site is a part, as having a high potential for solar resources (BLM and DOE 2012). Also, there are a number of proposed and approved solar projects that have been constructed in close proximity to the Project site (refer to the Cumulative Project Map found in Chapter 4.1). As such, the Project would be sited in an area with excellent solar energy resources in order to maximize productivity from the PV panels.

Proven and Available Solar PV Technology

The Project would use proven and available PV solar modules, mounted on either single-axis horizontal tracker structures or fixed-tilt mounting systems, which provide efficient solar energy at a cost-effective utility scale. Solar PV technology has been commercially used for over 40 years. According to the U.S. Solar Market Insight Report, 6,234 MW of utility-scale photovoltaic solar systems were installed in the United States in 2017. The cumulative contracted PV capacity operating in the country now stands at 18,100 MW (SEIA 2018).

1.4 Project Location and Overview

The Applicant proposes to construct, operate, maintain, and decommission a solar PV electric generating facility with a capacity of 450 MW. The DQSP would be located in the southern California inland desert, approximately 2.75 miles southwest of the City of Blythe, just south of the Interstate 10 (I-10) freeway, and 1.5 miles southwest of Blythe Airport in Riverside County, California (Figure 2-1).

As reflected in the ROW grant application filed with the BLM, and subsequently serialized as application # CACA-049397 for BLM record tracking, the DQSP would be located primarily on BLM-administered land, within Sections 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 22, 23, and 24 of Township 7S, Range 21E, San Bernardino Base and Meridian. The Applicant is seeking a ROW grant for approximately 3,616 acres. Within the proposed Project area, construction and operation would disturb approximately 3,560 acres of BLM land for the solar plant site and other Project-related facilities, 54 acres of BLM land for a 2.79 mile gen-tie corridor with a width of 160 feet, and 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land. The DQSP also would disturb approximately 154 acres of private lands that are under County jurisdiction, and are adjacent to the BLM ROW grant boundary. The Project does not include any County real property or County right-of-way.

1.5 Major Authorizing Laws and Regulations/Agency Roles and Authorizations

The primary agency-specific authorizing laws, regulations, and policies governing the Lead Agencies' decisions are summarized below. Other relevant resource- and issue-specific laws, regulations, plans, and policies are summarized in Appendix D.

1.5.1 BLM

BLM's authority and policy guidance for making a decision related to the Proposed Action is derived from FLPMA (43 USC §1701 et. seq.), EPAct § 211 (119 Stat. 594, 600). FLPMA authorizes the BLM to issue ROW grants for systems for generation, transmission, and distribution of electric energy. Section 211 of the EPAct states that the Secretary of the Interior should seek to have approved a minimum of 10,000 MW of renewable energy-generating capacity on public lands by 2015. The BLM's policies and procedures for authorizing individual solar energy projects are found in the BLM's regulations at 43 CFR 2800.

The BLM will decide whether to deny the proposed ROW, grant the ROW, or grant the ROW with modifications. The BLM may include any terms, conditions, and stipulations it determines

to be in the public interest, which may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR Part 2805.10(b)(1)).

The Western Solar Plan recognizes the DQSP as a "pending" ROW application (Western Solar Plan §9.4.22.2, p. 9.4-133). Pending applications like the DQSP are not subject to the land use planning decisions in the Western Solar Plan (Western Solar Plan ROD Section B.1.2) or to the CDCA Plan amendments made in that decision. Therefore, if the BLM elects to approve the ROW grant application for the DQSP, a Project-specific PA would be required. The decision to be made by the BLM regarding the ROW grant for the gen-tie line corridor will also require a PA, because a portion of that proposed facility lies outside of a designated utility corridor. This Draft PA/EIS/EIR acts as the mechanism for complying with the NEPA and plan amendment requirements of the CDCA Plan relevant to the Proposed Action.

1.5.2 Riverside County

Implementation of the portions of the proposed Project that would be located on privately-owned lands would require discretionary approvals from Riverside County, including a Conditional Use Permit (CUP) and Public Use Permit (PUP). In addition to the Conditional Use Permit, the Applicant would be required to enter into a Development Agreement with the County for the DQSP consistent with the County's solar power plant program. The Development Agreement has a term of 30 years and will grant the Applicant vesting rights to develop the Project in accordance with the terms of the agreement. The Development Agreement contains terms consistent with Board of Supervisors Policy No. B-29, including terms regarding annual public benefits payments and increases and terms requiring the applicant to take actions to ensure allocation directly to the County of the sales and use taxes payable in connection with the construction of the solar power plant, to the maximum extent possible under the law. Approval and use of the Conditional Use Permit are conditioned upon the Development Agreement being entered into and effective.

This Draft PA/EIS/EIR will be used by the County, in conjunction with other information developed in the County's formal administrative record for the Project, when considering whether to approve the CUP, PUP, and Development Agreement for the construction, operation, maintenance, and decommissioning of the proposed Project on lands subject to County jurisdiction. Pursuant to CEQA requirements, the County will determine the adequacy of the Final EIR and, if determined adequate, will certify the document as complying with CEQA.

1.5.3 U.S. Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) has jurisdiction over threatened and endangered species listed under the Federal Endangered Species Act (FESA) (16 USC § 1531 et seq.). Formal consultation with the USFWS under Section 7 of the FESA is required for any Federal action that may adversely affect a Federally listed species. This consultation will be initiated through the preparation and submittal of a Biological Assessment (BA) and is expected to conclude with the USFWS's issuance of a Biological Opinion (BO) that specifies reasonable and prudent measures that must be implemented to minimize the impacts of incidental take of any protected species that is anticipated to result from implementing the Project.

1.5.4 U.S. Army Corps of Engineers

The United States Army Corps of Engineers (USACE) has jurisdiction to protect the waters of the United States, including protection of water quality and wetland resources, under §404 of the Clean Water Act (CWA). Under that authority, USACE regulates the discharge of dredged or fill material into waters of the United States, including wetlands, by reviewing proposed projects to determine whether they may impact such resources and, thereby, are subject to retain a §404 permit. On May 8, 2015, the Applicant submitted a request to the Los Angeles District of the USACE for an approved Department of the Army Jurisdictional Determination (JD) for the Project site. Additional field data in support of the request were submitted to the USACE in October, 2015. In a letter dated February 18, 2016, the USACE determined that waters of the United States do not occur on the Project site. The letter is attached to the Federal Jurisdictional Delineation provided in Appendix I.

1.5.5 California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) protects fish and aquatic habitats within the state through regulation of modifications to stream and lakebeds, under §1602 of the California Fish and Game Code. CDFW has interpreted the term "streambed" to encompass all portions of the bed, banks, and channel of any stream, including intermittent and ephemeral streams, extending laterally to the upland edge of riparian vegetation. In the case of vegetated ephemeral dry washes, such as those present on the Project site, this CDFW interpretation often results in an asserted geographic jurisdictional area that is much wider than the active channel of the stream and, therefore, much wider than the jurisdiction of the USACE. Section 1602(a) states that it is unlawful for an entity to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying CDFW of that activity. If CDFW determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity will need to obtain a Lake or Streambed Alteration Agreement from the CDFW before it may commence the activity (Fish & Game Code §1602(a)(4)(B)). CDFW would include in the Lake or Streambed Alteration Agreement measures necessary to protect the affected resources. The requirements of a Streambed Alteration Agreement would apply to the Project independent of and in addition to mitigation measures included in the PA/EIS/EIR.

CDFW also has the authority to regulate potential impacts to species that are protected under the California Endangered Species Act (CESA) (Fish and Game Code §2050, et seq.). If appropriate, the Applicant would be required to file an Incidental Take Permit application, and the requirements of the Incidental Take Permit would apply to the Project independent of and in addition to the mitigation measures included in the PA/EIS/EIR.

Under the provisions of the California Desert Native Plants Act, CDFW is charged with oversight of harvesting certain species of California desert native plants on both public and privately owned lands in the counties of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego. Removal of specific plants species requires a valid permit and any required tags or seals obtained from the respective county Sheriff's Office or Commissioner's Office where collection occurs. Plants found in the Project area that fall under the California Desert Native Plants Act are listed in Section 3.3.

1.6 Policy Consistency and Land Use Conformance

1.6.1 Relationship of the Proposed Action to the Western Solar Plan

In order to address interest in solar energy development and to implement a national energy policy recommendation to increase renewable energy production, in 2012 BLM and the U.S. Department of Energy (DOE) undertook efforts to comprehensively evaluate solar energy potential on public lands. In July 2012, BLM and DOE published the Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Western Solar Plan). The Western Solar Plan analyzed two alternative plans for managing solar energy development on BLM-administered public lands in the six-state study area. One of these plans, called the Western Solar Plan, was adopted through the Approved Resource Management Plan Amendments/ROD for Solar Energy Development in Six Southwestern States in October 2012.

The Western Solar Plan made amendments to 89 BLM land use plans, including the CDCA Plan, not only to support solar energy development on public lands, but also to minimize potential environmental, cultural, and socioeconomic impacts. As part of the Western Solar Plan, the BLM identified priority development areas called Solar Energy Zones (SEZs) that are well suited for utility-scale production of solar energy, "variance" areas outside of SEZs where solar development would be open to applications, and "exclusion" areas where utility-scale solar energy development would not be permitted. The Project is located within the Riverside East SEZ.

The Western Solar Plan states that "pending" applications filed within SEZs prior to June 30, 2009 are not subject to the land use planning decisions in the Western Solar Plan. Amendments to pending applications are also not subject to the Plan's new requirements, provided that such amendments either (1) do not change the boundaries of the pending ROW applications; or (2) are related to avoiding resource or land use conflicts, adapting the project to third-party-owned infrastructure constraints, or using or designating translocation or mitigation lands (Section B.12, Western Solar Plan ROD). Instead, "pending" applications and qualifying amendments (that is, revisions to applications) must be processed consistently with the land use plan decisions that existed prior to the adoption of the Western Solar Plan ROD.

The Desert Quartzite Solar Project's initial application for a right-of-way grant (ROW) was submitted to BLM on September 28, 2007. Therefore, the Project qualifies as a "pending" application which is exempt from the Western Solar Plan ROD, and is instead subject to the land use plan decisions that preceded the Western Solar Plan. The Desert Quartzite Solar PV proposal is an amendment to this pending application. As explained below, to the extent that the Desert Quartzite PV proposal "change[s] the boundaries of the pending ROW application" those changes are related either to "avoiding resource or land use conflicts" or to "adapting the project to third-party-owned infrastructure constraints." Thus, Desert Quartzite Solar PV Project is exempt from the requirements of the Western Solar Plan ROD. The Desert Quartzite Solar PV proposal is therefore being processed under the CDCA land use plan decisions that were in place prior to the adoption of the Western Solar Plan.

The qualifications for the exemption provided in ROD Section B.1.2 focus on amendments to an application that affect the boundaries of the ROW. Therefore, amendments which do not relate to boundary changes are not relevant to the exemption inquiry. For instance, the change in

footprint boundaries to avoid or reduce impacts under the DQSP proposal do not affect whether the Project is exempt from the Western Solar Plan ROD.

1.6.2 Relationship of the Proposed Action to the Desert Renewable Energy Conservation Plan

In November 2008, pursuant to an executive order by the Governor of California, Federal and California state agencies formed the Renewable Energy Action Team (REAT) to, among other things, develop the DRECP. As ultimately approved, the purpose of the DRECP is to conserve and manage plant and wildlife communities on BLM-administered Federal lands in the desert regions of California while streamlining the approval of compatible renewable energy projects. BLM published its ROD and Land Use Plan Amendment (LUPA) to the California Desert Conservation Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan in September 2016.

Of the approximately 10 million acres of BLM-managed public lands in the Mojave and Colorado desert regions of California, the DRECP LUPA allocated approximately 388,000 acres as Development Focus Areas (DFAs) for solar, wind, and geothermal projects, similar to the SEZs under the Western Solar Plan. It also allocated variance lands where renewable energy may be developed depending on further review. The DRECP LUPA also allocated lands for conservation and recreation, and determined that those allocations were not compatible with renewable energy development. Finally, renewable energy may be considered on general public lands, which are lands not allocated for specific values or uses. The Project is located within a DFA.

Pursuant to Section II.3.2.4 of the DRECP LUPA, the DRECP does not apply to "[a] project that is proposed in a BLM SEZ and that is considered a 'pending project' under the Western Solar Plan (the project application was filed before June 30, 2009)." As discussed above, the initial project application was filed before June 30, 2009, the Project is located within a SEZ, and the amendments contemplated by the Desert Quartzite Solar PV proposal either do not affect the project boundaries (e.g., change in project developer) or are related to avoiding resource or land use conflicts or adapting the Project to third-party-owned infrastructure constraints. Therefore, the Desert Quartzite Solar PV proposal is being processed under the CDCA land use plan decisions in place prior to the adoption of the DRECP LUPA and Western Solar Plan.

Although this application is being processed under the CDCA Plan in place prior to the DRECP LUPA and Western Solar Plan, the BLM has considered information developed through the DRECP LUPA process in this EIS, as reflected in the affected environment and environmental consequences sections. Additionally, Alternative 3 (Reduced Project Alternative) considers application of some mitigation and avoidance measures developed through the DRECP LUPA (called Conservation and Management Actions [CMAs] in the DRECP LUPA).

To assist the reader in understanding how the Project was analyzed under a prior land use plan after a new plan had been developed, a discussion of the differences between the CDCA Plan and the DRECP land use allocations, and their effect on the analysis of the Project in this PA/EIS/EIR, is presented in Appendix E. In some instances, the Proposed Project and/or its alternatives substantially conform with the CMAs identified in the DRECP for the development of renewable energy in DFAs. In other instances, BLM looked to select CMAs for guidance on mitigating or avoiding certain impacts.

1.6.3 Northern and Eastern Colorado Desert Coordinated Management Plan

The BLM's Northern and Eastern Colorado (NECO) Plan amended the CDCA Plan in 2002 to make it compatible with desert tortoise conservation and recovery efforts. The NECO Plan is a landscape-scale planning effort that covers most of the California portion of the Sonoran Desert ecosystem, including over 5 million acres and two Mojave desert tortoise recovery units. The NECO Plan established conservation areas and proscribed management actions in the region that includes the Project area.

1.6.4 Land Use Plan Conformance

The CDCA Plan area encompasses 25 million acres in southern California designated by Congress in 1976 through FLPMA. The CDCA Plan is a comprehensive, long-range plan that was adopted in 1980; it has since been amended many times. The CDCA is a 25-million-acre area that contains over 12 million acres of BLM-administered public lands in the California Desert, which includes the Mojave Desert, the Sonoran Desert, and a small part of the Great Basin Desert. The CDCA Plan provides regional guidance for BLM-administered lands within the Plan Area and establishes long-term goals for protection and use of the California desert. It is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. The CDCA Plan establishes multiple use classes, multiple use class guidelines, and plan elements for specific resources or activities, such as motorized vehicle access, recreation, and vegetation. While the DRECP has eliminated the multiple use classes, the Proposed Action is analyzed under the classes because it is not subject to land use planning decisions in the DRECP.

The Desert Quartzite Solar site is classified in the CDCA Plan as Multiple-Use Class (MUC) M (Moderate Use). The Desert Quartzite Solar site currently is not identified in the CDCA Plan for use as a solar power facility. To accommodate the DQSP or any of the action alternatives, the CDCA Plan must be amended to identify the use of the site as a solar power facility. As noted above, both the Western Solar Plan and the DRECP have defined the Desert Quartzite Solar site as being appropriate for solar development. However, because the DQSP is not subject to those plan amendments, it requires a project-specific PA. Compliance of the Project with the multiple use class designations is discussed in the lands and realty section of the PA/EIS/EIR (Section 4.10, and in Appendix F).

Based on CDCA Plan Table 1, Multiple Use Class Guidelines, and CDCA Plan Chapter 3, Energy Production and Utility Corridors Element, solar uses are conditionally allowed in the Multiple Use Class M designation contingent on NEPA requirements being met for the proposed use. Table 1, Item 7 (Transmission Facilities) of the CDCA Plan specifies that new electric transmission facilities are allowed only within designated corridors. A portion of the proposed gen-tie line would be located outside of a designated corridor. Therefore, a PA is required to authorize this portion of the gen-tie line. This Draft PA/EIS/EIR will act as the mechanism for complying with the NEPA and plan amendment requirements of the CDCA Plan relevant to the Proposed Action.

Planning Criteria (BLM)

The CDCA Plan planning criteria are the constraints and ground rules that guide and direct the development of the PA. They ensure that the PA is tailored to the identified issues and ensure that unnecessary data collection and analyses are avoided. They focus on the decisions to be

made in the PA regarding authorization of the solar facility and the portion of the gen-tie line outside of the solar facility boundary and a designated utility corridor.

As specified in Chapter 7 of the CDCA Plan, "Plan Amendment Process", there are three categories of plan amendments:

- Category 1, for proposed changes that will not result in significant environmental impact or analysis through an Environmental Impact Statement;
- Category 2, for proposed changes that would require a significant change in the location or extent of a multiple-use class designation; and
- Category 3, to accommodate a request for a specific use or activity that will require analysis beyond the plan amendment decision.

Based on these criteria, approval of the location for the proposed solar facility and of the gen-tie line outside of the main facility and designated corridor, would each require a Category 3 amendment. The section below summarizes the procedures necessary to evaluate the proposed PAs, as well as the procedures required to perform the environmental review of the ROW application for both.

Plan Amendment Process

The plan amendment process is outlined in Chapter 7 of the CDCA Plan. In analyzing an applicant's request for amending or changing the CDCA Plan, the BLM District Manager will:

1. Determine if the request has been properly submitted and if any law or regulation prohibits granting the requested amendment.
2. Determine if alternative locations within the CDCA are available which would meet the applicant's needs without requiring a change in the Plan's classification, or an amendment to any Plan element.
3. Determine the environmental effects of granting and/or implementing the applicant's request.
4. Consider the economic and social impacts of granting and/or implementing the applicant's request.
5. Provide opportunities for and consideration of public comment on the proposed amendment, including input from the public and from Federal, state, and local government agencies.
6. Evaluate the effect of the proposed amendment on BLM management's desert-wide obligation to achieve and maintain a balance between resource use and resource protection.

Decision Criteria for Evaluation of Proposed Plan Amendment

The Decision Criteria to be used for approval or disapproval of the proposed amendment require that the following determinations be made by the BLM Desert District Manager:

1. The proposed amendment is in accordance with applicable laws and regulations; and

2. The proposed amendment will provide for the immediate and future management, use, development, and protection of the public lands within the CDCA.

The BLM Desert District Manager will base the rationale for these determinations on the principles of multiple use, sustained yield, and maintenance of environmental quality as required in FLPMA.

Decision Criteria for Evaluation of Application

In addition to defining the required analyses and Decision Criteria for plan amendments, the CDCA Plan also defines the Decision Criteria to be used to evaluate future applications in the Energy Production and Utility Corridors Element of Chapter 3. These Decision Criteria include:

1. Minimize the number of separate rights-of-way by utilizing existing rights-of-way as a basis for planning corridors;
2. Encourage joint-use of corridors for transmission lines, canals, pipelines, and cables;
3. Provide alternative corridors to be considered during processing of applications;
4. Avoid sensitive resources wherever possible;
5. Conform to local plans whenever possible;
6. Consider wilderness values and be consistent with final wilderness recommendations;
7. Complete the delivery systems network;
8. Consider ongoing projects for which decisions have been made; and
9. Consider corridor networks which take into account power needs and alternative fuel resources.

The BLM will include a statement in the Record of Decision evaluating these criteria based on the information contained in this PA/EIS and on comments received during the public comment period on the Draft PA/EIS/EIR.

1.7 Document Organization

This is a joint Draft PA/EIS/EIR document prepared in compliance with both NEPA and CEQA. The document is longer and more complex than would be typical if the document were an EIS or EIR only.

This document follows regulations promulgated by the CEQ for Implementing the Procedural Provisions of NEPA (40 CFR §§1500-1508); the DOI's NEPA regulations, 43 CFR Part 46; the BLM NEPA Handbook, H-1790-1; FLPMA §§201, 202, and 206 (43 CFR §1600); the BLM Land Use Planning Handbook, H1601-1; and DOE's NEPA implementing procedures (10 CFR §1021). This PA/EIS/EIR describes the components of and reasonable alternatives to the Proposed Action, environmental consequences of the Proposed Action and other alternatives, and the agencies and persons consulted during preparation of the PA/EIS/EIR. Table 1-1 identifies each NEPA element with a reference to the corresponding section(s) in the Draft PA/EIS/EIR where the elements are discussed. The format and content of this Draft PA/EIS/EIR are consistent with the BLM NEPA Handbook (H-1790-1) as listed in Table 1-1.

The state CEQA Guidelines provide that each EIR contain essential elements of discussion. Table 1-1 identifies each CEQA element that must be described in an EIR along with a reference to the corresponding section(s) in the Draft PA/EIS/EIR where the elements are discussed.

The PA/EIS/EIR is organized as follows:

Executive Summary provides the reader an opportunity to understand the entire Project and its implications. The Executive Summary includes: a brief description of the Project Applicant; lead agency and responsible agency data; a narrative summary of each impact, with proposed mitigation measures and alternatives that would reduce those impacts; areas of interest known to the lead agencies; and issues to be resolved including the choice among alternatives and whether or how to mitigate the impacts.

Chapter 1 provides general background on the Proposed Action (CEQA Project Description); describes the purpose of NEPA, CEQA and the Draft PA/EIS/EIR; identifies the purpose and need for the Proposed Action, and Project objectives; and identifies roles of the BLM, the County, and other agencies and authorities regulating various aspects of the Proposed Action. Chapter 1 also describes the format and content of the Draft PA/EIS/EIR; permits and other discretionary actions required for the Project; related review and consultation requirements; and contact persons for the Draft PA/EIS/EIR.

Chapter 2 describes the Proposed Action (Project Description), the Action/Project alternatives development, and the screening process conducted for the Project alternatives. It presents a range of reasonable alternatives that address the stated purpose and need for the Project and identifies and explains why other alternatives were considered but not analyzed in detail.

Chapter 3 describes the affected environment (environmental setting, 14 CCR § 15125) for 20 environmental resource and issue areas relevant to that area that would be affected by the Proposed Action. The regulatory framework for each environmental resource topic is summarized in Appendix D. Please see Section 1.8.2 for a list of the resource topics covered in this Draft PA/EIS/EIR.

Chapter 4 provides a comprehensive analysis and assessment of direct, indirect, and cumulative impacts (environmental consequences) and mitigation measures (by environmental resource and issue area) for the Proposed Action and alternatives (including a No Action Alternative). It also describes other aspects of BLM compliance with NEPA procedures, including any residual impacts. Please see Section 1.8.2 for a list of the resource topics covered in this Draft PA/EIS/EIR.

Chapter 5 presents analyses of other NEPA and CEQA issues, including any irreversible or irretrievable commitments of resources (40 CFR § 1502.16), significant irreversible environmental changes, growth-inducing impacts, and unavoidable significant environmental impacts under CEQA.

Chapter 6 identifies the persons, groups, agencies, and other governmental bodies that were consulted or that contributed to the preparation of the Draft PA/EIS/EIR; describes Native American consultations and public participation during scoping; provides a list of Draft PA/EIS/EIR preparers; and lists agencies, organizations, and persons to whom the Draft PA/EIS/EIR will be sent.

Appendices contain information that supplements or supports the analyses in the body of the Draft PA/EIS/EIR, as follows:

- Appendices A through C provide the figures, acronyms, glossary, and references associated with the PA/EIS/EIR document;
- Appendix D provides the Applicable Regulations, Plans, and Standards for each of the resources analyzed;
- Appendices E and F provide analyses of the Project with respect to land management plans;
- Appendix G provides the mitigation measures developed for the Project;
- Appendix H provides the Public Scoping Report; and
- Appendices I through Y provide the technical reports developed by the Applicant to support the environmental analysis of the Project.

The baseline physical conditions as analyzed in the technical reports are the conditions that existed at the time of the issuance of the NOI for the preparation of a Draft PA and EIS, and Notice of Preparation (NOP) of an EIR (state CEQA Guidelines Section 15125(a)) in March, 2015.

Table 1-1. Recommended PA/EIS/EIR Sections and Required Elements

Draft PA/EIS/EIR Section	Recommended NEPA EIS Sections	CEQA Required Element/ State CEQA Guidelines
Table of Contents	N/A	Table of Contents (Section 15122)
Executive Summary	N/A	Summary (Section 15123)
Chapter 1	Introduction Identifying Information Location of Proposal Purpose and Need for Action and Decision to be Made Scoping and Public Involvement Issues	Project Description (Section 15124) Regional Map Project Objectives List of Agencies Expected to Use EIR List of Required Permits and Approvals List of Related Review and Consultation Requirements
Chapter 2	Proposed Action and Alternatives Description of Proposed Action Description of Alternatives Analyzed in Detail Alternatives Considered but not Analyzed in Detail	Project Description (Section 15124) Precise location and boundaries of the Project Project's Characteristics Alternatives to the Proposed Project (Section 15126)
Chapter 3	Affected Environment	Environmental Setting (Section 15125) Effects Found Not to Be Significant (Section 15128)
Chapter 4	Environmental Effects Direct and Indirect Effects Cumulative Effects Residual Effects Identify and analyze mitigation measures, if any	Environmental Impact Analysis (Section 15126) Significant Environmental Effects Significant Environmental Effects that Cannot Be Avoided Mitigation Measures Cumulative Impacts (Section 15130) Alternatives Evaluation (15126.6)

Table 1-1. Recommended PA/EIS/EIR Sections and Required Elements

Draft PA/EIS/EIR Section	Recommended NEPA EIS Sections	CEQA Required Element/ State CEQA Guidelines
Chapter 5	Irreversible or irretrievable commitments of resources (40 CFR §1502.16	Long-Term Implications of the Proposed Project (Section 15126.2) Significant Irreversible Environmental Changes Growth-Inducing Impacts
Chapter 6	Tribes, Individuals, Organizations, or Agencies Consulted List of Preparers	List of Organizations, Agencies, and Persons Consulted and List of Preparers (Section 15129)

N/A = not applicable

1.8 Scoping/Issues Addressed in the Analysis

1.8.1 Scoping Process

The BLM and County solicited internal and external input on the issues, impacts, and potential alternatives to be addressed in the Draft PA/EIS/EIR for the Project, as well as the extent to which those issues and impacts would be analyzed in the document. This process is called "scoping" (40 CFR §1501.7; 14 CCR §§ 15082[a], 15103, 15375). Internal input was provided by the BLM, Riverside County, and cooperating agencies as an interdisciplinary process, to help define issues, alternatives, and data needs. External scoping involved notification and opportunities for feedback from other agencies, organizations, tribes, local governments, and the public. Formal public scoping began following publication of a NOI under NEPA and release of a NOP under CEQA.

The NOI for the Proposed Action was published in the Federal Register on March 6, 2015 (80 FR 12195). The NOP was issued on March 13, 2015. In addition to being published in the NOI and NOP, information regarding the public meetings was published in the Parker Pioneer, Desert Sun, and Palo Verde Times on March 18, 2015. The meetings were also were announced on the BLM website for the Project, at http://www.blm.gov/ca/st/en/fo/palmsprings/Desert_Quartzite.html. Notice of the meetings was also mailed to 190 recipients, which included agencies, Native American tribes, organizations, and interested individuals. Copies of the NOP were provided to the Office of Planning and Research (State Clearinghouse) for issuance to state agencies. One hundred and ninety copies of the NOP were distributed to Federal, state, and local agencies, responsible and trustee agencies, local governments, private organizations, Native American tribes, and other interested parties.

Both the NOI and the NOP announced the dates, times, and locations of public scoping meetings in Parker, Arizona on March 23, 2015, and in Blythe, California, on March 24, 2015. The purpose of the meetings was to inform the public about the Project; describe the purpose and need of the Project; provide information regarding the environmental review process; and gather public input regarding the scope and content of the Draft PA/EIS/EIR. The BLM, County, and Applicant presented information about the Project, alternatives, environmental review process, and potential impacts. Following the presentations, members of the public were invited to make verbal comments. A total of six individuals made public comments at the meetings. At the conclusion of the public comments, staff members from the agencies and the Applicant were available to answer questions and gather input.

The comment period for the NOI and NOP began on March 6, 2015, and ended on April 13, 2015. A total of nine written comment letters were submitted to BLM, 13 written comment letters were submitted to the County, and four comment letters were jointly submitted to both agencies. Comments received during the scoping process are provided in Appendix H, *Public Scoping Report* and raised the following issue topics:

- Air Quality
- Alternatives
- Biological Resources
- BLM Procedures
- Cultural Resources
- Environmental Justice and Impacted Communities
- Fire
- Global Climate Change
- Hazardous Materials/Hazardous Waste/Solid Waste
- Indirect and Cumulative Impacts
- Land Use
- Public Health
- Purpose and Need
- Tribal Governments
- Visual Resources
- Water Resources

1.8.2 Resources Analyzed

The following environmental resources have a potential to be affected by activities related to the proposed Project and alternatives and thus are evaluated in this Draft PA/EIS/EIR:

- Air Resources
- Biological Resources – Vegetation
- Biological Resources – Wildlife
- Cultural Resources
- Geology and Soils
- Global Climate Change
- Hazards and Hazardous Materials
- Lands and Realty
- Mineral Resources

- Noise
- Paleontological Resources
- Recreation
- Socioeconomics and Environmental Justice
- Special Designations
- Traffic and Transportation
- Utilities and Public Services
- Visual Resources
- Water Quality

The following environmental resources are either not present or not impacted by the proposed Project or Alternatives, and therefore not discussed in detail in this Draft PA/EIS/EIR:

- Forestry
- Livestock Grazing
- Wild Horses and Burros

None of these resources or activities are located on the site, or in areas that could be impacted by the Proposed Action. There is no forest land located on or near the site. There is no livestock grazing within the East Riverside SEZ, and no wild horse or burro populations. Accordingly, impacts to these resources are unlikely to occur.

1.9 Permits and Approvals

Review and approval of the Proposed Action is within the primary jurisdiction of the BLM for those portions of the Proposed Action that would be constructed, operated, maintained, and decommissioned on BLM-administered public land, and within the County's primary land use jurisdiction for those portions of the Proposed Action that would be developed and operated on privately owned or County-owned land within its jurisdiction. The BLM may issue a ROD making a decision regarding the issuance of the ROW grant for the portions of the Proposed Action on public land. The County may issue the CUP and/or PUP for the portions on private land and County-owned land. Other Federal, state, and local agencies also could exercise authority over specific elements of the Proposed Action with respect to air quality and greenhouse gas emissions, land use, biological and cultural resources, stormwater drainage and hydrology issues, roadway easements, and crossing encroachments.

Table 1-2 below provides a list of the anticipated Federal, state, and local permits and approvals that would be required for the proposed Project and the agencies that are anticipated to rely on the Draft PA/EIS/EIR. Other relevant resource- and issue-specific laws, regulations, plans, and policies applicable to the proposed Project are summarized in Appendix D. Please refer to Chapter 6, *Coordination, Consultation, and Public Involvement* for a detailed discussion on consultations and persons consulted for the proposed Project and alternatives.

1.9.1 Related Federal Review and Consultation Requirements

In addition to complying with NEPA, the BLM will comply with other Federal regulations and authorizations and conduct necessary consultations regarding the resources potentially affected by the proposed Project. Such consultations include but are not limited to:

- United States Fish and Wildlife Service (USFWS): The USFWS has jurisdiction to protect threatened and endangered species under the Endangered Species Act (ESA) (16 U.S.C. § 1531 et seq.). Under Section 7 of the ESA, the BLM is obligated to conduct informal and, if necessary, formal consultation with the USFWS relative to Federal actions that may adversely affect a Federally listed species.

- Section 106 of the National Historic Preservation Act (NHPA), as amended, 54 U.S.C. § 100101 et seq., (36 CFR Part 800), requires Federal agencies to take into account the effects of a proposed undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment (36 CFR Part 800.1(a)). The Section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess the undertaking's effects, and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties (36 CFR Part 800.1).

- Government-to-Government Consultation: In addition to the requirements of the NHPA and NEPA, the BLM is required to consult with Native American tribes according to Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, which directs Federal agencies to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Native American tribes, and to reduce the imposition of unfunded mandates upon Native American tribes. Also, the Presidential Memorandum for the Heads of Executive Departments and Agencies Regarding Government-to-Government Relations with Native American Tribal Governments, issued November 5, 2009, directs executive departments and agencies to engage in regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, and to strengthen the government-to-government relationship between the United States and Native American tribes. Government-to-government consultation between the BLM and tribal governments is an ongoing process that will continue even after the Section 106 process for the proposed Project has been completed.

- The USACE has jurisdiction to protect navigable and interstate waters (waters of the United States), including water quality and wetland resources, under Section 404 of the Clean Water Act (CWA). Under that authority, the USACE regulates the discharge of dredged or fill material into waters of the United States, including wetlands and tributaries, by reviewing proposed projects to determine whether they may impact such resources and, thereby, are subject to a Section 404 permit. Alternatively, minor impacts may be covered under one of several nationwide permits. On May 8, 2015, the Applicant submitted a request to the Los Angeles District of the USACE for an approved Department of the Army Jurisdictional Determination (JD) for the Project site.

Additional field data in support of the request were submitted to the USACE in October 2015. In a letter dated February 18, 2016, the USACE determined that waters of the United States do not occur on the Project site. The letter is attached to the Federal Jurisdictional Delineation provided in Appendix I.

1.9.2 Related State and Local Review and Consultation Requirements

Ancillary permits, including encroachment permits, grading and construction permits, and certificates of occupancy, are anticipated from the County. These permits and approvals are local ministerial actions that will parallel or follow CEQA compliance. Other state and local agencies or regulatory entities that could exercise authority over specific elements of the proposed Project include:

- Riverside County Airport Land Use Commission (ALUC): The ALUC will review the proposed solar facility layout, transmission components, glint and glare analysis, and ancillary facilities to determine the consistency of the Project with the 2004 Blythe Airport Land Use Compatibility Plan.
- California Department of Fish and Wildlife (CDFW): Informal consultation will occur with the CDFW, Inland Desert Region, concerning the scope of biological resource studies and species of interest relative to the portion of the proposed Project on private lands.
- Mojave Desert Air Quality Management District (MDAQMD): Permits regulating air pollutant emissions during Project construction, operation, maintenance, and decommissioning are anticipated to be issued by the MDAQMD upon demonstration that the Project will comply with local air regulations.
- Native American Heritage Commission (NAHC): The Applicant has submitted a letter to the NAHC requesting a list of Native American tribes that should be contacted for information about cultural resources that may occur on or in close proximity to the proposed Project area, as well a Sacred Lands File search. Information requests were submitted to the listed Tribes via United States mail.
- California Independent System Operator (CAISO): On December 15, 2010, the Applicant submitted a request to CAISO for a secured interconnection queue position. This is a necessary element of being able to transmit generated power to the statewide electric grid.
- Department of Defense: As required by California Senate Bill 1462 (2004), the County will notify the DoD that the Project is being planned, and invite consultation, if needed, to determine the potential impact on military overflights and operations.

Consultation under AB 52 is not applicable to the Project because the date of the NOP for the DQSP was March 12, 2015, prior to the effective date of AB 52 on July 1, 2015.

The Project is being evaluated pursuant to the Riverside County General Plan (RCGP) (Riverside County 2015a). Land Use Policy LU-17.2 of the RCGP states: "Permit and encourage, in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including but not limited to, the development of solar power plants in the County of Riverside." In connection with General Plan Amendment 1080, Riverside

also enacted Ordinance No. 348.4705, which amended the zoning code to allow a solar power plant on a lot 10 acres or larger in certain zoning districts, upon issuance of a use permit.

Table 1-2. Anticipated Permits and Approvals

Authority or Approving Agency	Permit or Approval	Triggering Action	Statutory Reference
Federal			
BLM	Grant of long-term ROW	Proposed solar facility and gen-tie line construction and operation would occur, in part, on lands under BLM management	Federal Land Policy and Management Act of 1976 (PL 94-579), 43 U.S.C. §§1761-1771; 43 CFR Part 2800. National Environmental Policy Act of 1969 as amended (PL 91-190), 42 U.S.C. §4332, and related statutes
BLM (cont'd)	Grant of short-term ROW	Temporary construction areas that would not be included in long-term ROW.	Federal Land Policy and Management Act of 1976 (PL 94-579), 43 U.S.C. §§1761-1771; 43 CFR Part 2800. National Environmental Policy Act of 1969 as amended (PL 91-190), 42 U.S.C. §4332, and related statutes
	ROW permits for pre-construction activities	Permits are required for the Applicant to enter the site to perform site assessment activities such as geotechnical investigations, groundwater well installation, and placement of a meteorological tower, as well as for pre-construction site clearance.	Federal Land Policy and Management Act of 1976 (PL 94-579), 43 U.S.C. §§1761-1771; 43 CFR Part 2800. National Environmental Policy Act of 1969 as amended (PL 91-190), 42 U.S.C. §4332, and related statutes
	Section 106 Compliance	BLM will consult with the State Historic Preservation Office and tribal governments to meet Section 106 consultation requirements.	National Historic Preservation Act
	Cultural Resource Use Permit	Testing may be required to determine the National Register of Historic Places significance and eligibility of identified sites.	Archaeological Resources Protection Act
	Field work authorization	The Applicant obtained a BLM Fieldwork Authorization Permit prior to conducting Class III archaeological resource inventories.	Federal Land Policy and Management Act of 1976 (PL 94-579), Sec. 302 (b), 43 USC 1732, Sec. 4 of P. L. 96-95, October 31, 1979, 16 USC, 470cc
U.S. Fish and Wildlife Service	Endangered/ Threatened Species Consultation and Incidental Take Permit	Proposed solar facility and gen-tie line construction and operation may impact Federally-listed species	Endangered Species Act

Table 1-2. Anticipated Permits and Approvals

Authority or Approving Agency	Permit or Approval	Triggering Action	Statutory Reference
U.S. Fish and Wildlife Service	Bird and Bat Conservation Strategy	Proposed solar facility and gen-tie line construction and operation may impact migratory birds	Migratory Bird Treaty Act
Bureau of Reclamation	Project review	Coordination regarding the Draft Groundwater Accounting Surface	N/A
State of California			
California Department of Fish and Wildlife	Endangered/ Threatened Species Take Authorization	Proposed solar facility and gen-tie line construction and operation may impact state-listed species	California Endangered Species Act (CESA)
California Department of Fish and Wildlife (cont'd)	Lake or Streambed Alteration Agreement	Proposed construction and operation may potentially impact sensitive biological resources	California Fish and Game Code, Section 1601
State Water Resources Control Board – California Water Quality Control Boards for Colorado River Region	Demonstrate compliance with General Discharge Permits for Storm Water Associated with Construction Activity	Proposed construction may involve storm water discharges to surface Waters of the State	Clean Water Act, Section 401
Mojave Desert Air Quality Management District	Dust Control Plan	Proposed construction would generate fugitive dust	MDAQMD Rule 403
County of Riverside			
County of Riverside	Conditional Use Permit, Public Use Permit, Development Agreement	Proposed construction and operation of a portion of the Project located within County jurisdiction	County of Riverside Zoning Ordinance (Ordinance No. 348; CEQA, California Public Resources Code, Sec. 21000 et seq.
Riverside County Airport Land Use Commission	Director's Determination	Portions of the Project located within Compatibility Zone E.	Policy 1.5.2(d) of the Countywide Policies of the 2004 Riverside County Airport Land Use Compatibility Plan

1.10 Contact Persons

Please contact the following individuals regarding questions and concerns about the Project:

NEPA Lead Agency:

Brandon Anderson, Program Manager
Bureau of Land Management
Palm Springs-South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262

CEQA Lead Agency:

Russell Brady
Riverside County Planning Department
4080 Lemon Street, 12th Floor
P.O. Box 1409
Riverside, CA 92502-1409

CHAPTER 2
PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

This chapter describes the Applicant's proposal to construct, operate, maintain, and decommission a 450 MW solar PV energy generating facility and related infrastructure in unincorporated Riverside County, California, to be known as the Desert Quartzite Solar Project (DQSP; the "Project" or the "Proposed Action") on a combination of public land administered by the BLM and private land under the jurisdiction of the County. This chapter also describes alternatives to the Project, including a Resource Avoidance Alternative that would support a 450 MW solar PV facility, a Reduced Project Alternative that would support a 285 MW solar PV facility, and a No Action Alternative as required by NEPA and CEQA. Finally, this chapter describes the alternatives screening process, including alternatives that were considered but eliminated from detailed analysis.

2.2 Alternatives

NEPA and CEQA both require consideration of a reasonable range of alternatives to the proposed Project that have the potential to feasibly attain most of the basic objectives of the Project, and to meet the Federal purpose and need. In addition, CEQA requires the consideration of how to avoid or substantially lessen any of the significant or adverse effects caused by the Project. The NEPA and CEQA requirements for the identification of Project alternatives are described below.

2.2.1 NEPA and CEQA Requirements for Alternatives

Under NEPA, a Federal agency undertaking a "major Federal action" significantly affecting "the quality of the human environment" must prepare an EIS. 42 USC § 4332(2)(C). NEPA requires the BLM to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources". The range of appropriate alternatives is governed by a "rule of reason." An agency need only consider feasible and distinguishable alternatives reasonably related to the purposes of the project. It is not required to undertake an analysis of alternatives with substantially similar consequences as the proposed action.

Similar to NEPA, a rule of reason also governs the range of alternatives under CEQA. An agency need not consider alternatives that (i) fail to meet most of the basic project objectives, (ii) are infeasible, or (iii) cannot avoid significant environmental impacts. More specifically, state CEQA Guidelines Section 15126.6 states the following:

(a) An EIR shall describe a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

(b) The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if

these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

(c) The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

(d) The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.

(e) The EIR shall include the evaluation of the "No project" alternative.

(f) The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

In accordance with the foregoing principles, the Federal and state lead agencies identified the alternatives below to be carried forward and analyzed in this Draft PA/EIS/EIR.

2.2.2 Alternatives Development and Screening Process

Alternatives were evaluated using the criteria set forth in Section 6.6.3 of the BLM NEPA Handbook, which provides that an action alternative may be eliminated from detailed analysis if:

1. It is ineffective (it would not respond to the BLM's purpose and need);
2. It is technically or economically infeasible;
3. It is inconsistent with the basic policy objectives for the management of the area (such as, not in conformance with the land use plan (i.e., the CDCA Plan));
4. Its implementation is remote or speculative;
5. It is substantially similar in design to an alternative that is analyzed; or
6. It would have substantially similar effects to an alternative that is analyzed.

Similarly, state CEQA Guidelines 15126.6(f) specifies that "The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project."

The Project, Resource Avoidance Alternative, and Reduced Project Alternative were found to meet the specified requirements, and were therefore carried forward for more detailed analysis in Chapter 4. The No Action Alternative is described in Section 2.7, and the NEPA Preferred/CEQA Environmentally Superior Alternative is described in Section 2.8. Potential alternatives that met BLM's exclusionary criteria were eliminated from further analysis, and are described in Section 2.9.

2.2.3 Proposed Land Use Plan Amendment Decisions

The BLM has determined that a PA would be required if a ROW were granted for a solar power generating facility on the proposed site.

The Final Western Solar Plan and Record of Decision (ROD) and the DRECP recognize the DQSP as a "pending" ROW application (Western Solar Plan §9.4.22.2, p. 9.4-133; DRECP Section II.3.2.4, p. 68-69). Pending applications like the DQSP are not subject to the Western Solar Plan ROD (Western Solar Plan ROD Section B.1.2), the DRECP, or to the CDCA plan amendments made in those decisions. Therefore, if the BLM elects to approve the ROW grant application for the DQSP, a Project-specific PA, summarized in PA1, below would be required. Any subsequently filed applications for the Project site would, however, be subject to the Solar Energy Program and associated land use plan amendments.

The proposed gen-tie line would be sited almost entirely within BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52 (referred to as Corridor K/30-52 in this Draft PA/EIS/EIR). Section 368 of the Energy Policy Act of 2005 (P.L. 109-58) required Federal agencies to engage in transmission corridor planning (see Section 1.6.2.1 of the Draft Solar PEIS). As a result of this mandate, the BLM, DOE, USFS, and DoD prepared a PEIS to evaluate the designation of energy corridors on Federal lands in 11 western states (BLM 2009). The BLM and USFS issued RODs to amend their respective land use plans to designate numerous corridors, often referred to as Section 368 corridors. BLM's Utility Corridor K, originally designated by BLM in the CDCA Plan, was also designated as a Section 368 Federal Energy Corridor 30-52 in the DOE and DOI PEIS.

The interconnection point for the Project, the Colorado River Substation (CRSS), is sited approximately 1,500 feet south of the southern boundary of Corridor K/30-52. Consequently, the portion of the gen-tie corridor between the corridor and the CRSS would be located outside of the corridor, and would require consideration through the CDCA plan amendment process. Therefore, if the BLM elects to approve the ROW grant application for the DQSP, a Project-specific PA, summarized in PA2 below, would be required.

The PA decisions considered in the Draft PA/EIS are:

> **PA1:** The CDCA Plan would be amended to identify the development footprint as suitable for the proposed type of solar energy use. This would be adopted if a ROW were granted for the Project, the Resource Avoidance Alternative, or the Reduced Project Alternative.
>
> **PA2:** The CDCA Plan would be amended to authorize the portion of the gen-tie corridor which is located outside of BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52. This would be adopted if a ROW were granted for the Project, the Resource Avoidance Alternative, or the Reduced Project Alternative.

If these two decisions are not taken, the CDCA Plan would not be amended. This would result if the No Action Alternative were selected.

2.3 Features Common to all Action Alternatives, Including the Proposed Action

This section details the Project components that would be developed if any of the action alternatives were approved, regardless of the particular solar plant layout selected. Distinctions specific to each action alternative are detailed in Section 2.4 relating to the Proposed Action; in

Section 2.5 relating to the Resource Avoidance Alternative; and in Section 2.6 relating to the Reduced Project Alternative.

Each of the three action alternatives consists of the solar facility, a gen-tie line to connect the solar facility to the CRSS, O&M facility, an On-Site Substation, access roads, and other ancillary facilities.

2.3.1 Overview

The Applicant proposes to construct, operate, maintain, and decommission the DQSP in the southern California inland desert (Figure 2-1). The Project would occupy a total land area of approximately 3,770 acres. This includes 3,560 acres for the portion of the solar facility on BLM land; 54 acres for the 2.79-mile long, 160 foot wide transmission line (generation interconnection [gen-tie]) corridor on BLM land; 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land; and 154 acres for the portion of the solar facility on private land. The final ROW grant for the Project would be 3,616 acres of BLM land, and the County authorization for use of the private land would cover 154 acres. The Project would also require 61 acres of temporary work areas for construction (Figure 2-2). The Project would generate up to 450 MW using solar photovoltaic (PV) technology.

The Applicant provided the technical information about the Project components that are described in this section. All quantities, including those referring to land disturbance, equipment, schedule, mileage, and workforce, are based on the most current data available and generally represent conservative estimates for purposes of analyzing impacts. The numbers may change based on final engineering and various agencies' permit requirements.

In addition to the ROW application to use BLM land, the Applicant submitted a Conditional Use Permit Application (Application for Land Use and Development, Form 295-1010) to the County on February 25, 2015 (Riverside County CUP No. 3721). That application requests a permit to develop 160 acres of private land adjacent to, and surrounded on all sides by, the lands requested in the BLM ROW application.

The POD and 2015 County application are the primary sources of Project description information on which this section is based. Both the BLM POD and County applications have been supplemented with additional Project details, in the form of letters submitted to the BLM and the County, technical reports, management plans, and responses to requests for additional information.

Based on this input, key components of the Project are:

1. The solar plant site, which would include the solar arrays; power conversion systems; an On-Site Substation; an operations and maintenance (O&M) facility; a meteorological station; a guard shack; groundwater wells; energy storage systems; and related infrastructure and improvements; and
2. An overhead 230 kilovolt (kV) gen-tie line (maximum of 135 feet tall), connecting the solar plant site to the CRSS.

The key features of the Project are shown in Figure 2-2, and are discussed in the following subsections.

2.3.2 Site Description

2.3.2.1 Location

The DQSP would be located approximately 2.75 miles southwest of the City of Blythe, just south of the Interstate 10 (I-10) freeway, and 1.5 miles southwest of Blythe Airport in Riverside County, California (Figure 2-1). The Applicant is seeking a ROW grant from BLM, as well as authorization from the County to develop an approximately 160-acre parcel of private land that is surrounded by the BLM land. The portion of the ROW for the proposed gen-tie line would exit the solar facility at the northwest corner, and traverse approximately 2.79 miles west to the CRSS.

2.3.2.2 Legal Description

A legal description of the Project Site CACA-049397 is provided in Table 2-1. Figure 2–2 shows the Project Site Boundary in relation to the Public Land Survey System, along with land ownership of the Project Site and adjacent lands. The DQSP would be located primarily on BLM-administered land, within Sections 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 22, 23, and 24 of Township 7S, Range 21E, San Bernardino Base and Meridian.

The privately owned parcel consists of Assessor's Parcel Number 879-110-001, in Section 15 of Township 7S, Range 21E, San Bernardino Base and Meridian. First Solar Development, LLC has executed an agreement with the private land owner for an option to purchase the private land which would be used as a part of the DQSP. The Project does not include any County real property or County right-of-way.

Table 2-1. Legal Description of the Project Site Area
All lands located in Township 7S, Range 21E, San Bernardino Base and Meridian

BLM Lands	
Section 3	W1/2, W1/2E1/2, S1/2SE1/4SE1/4, Lots 4, 5, 6
Section 4	S1/2S1/2S1/2
Section 5	S1/2S1/2S1/2
Section 6	S1/2S1/2SE1/4
Section 7	NE 1/4
Section 8	NW1/4NW1/4, SW1/4NW1/4
Section 9	E1/2
Section 10	All
Section 11	N1/2, SW1/4
Section 12	NW1/4, N1/2SW1/4
Section 13	N1/2, SW1/4, W1/2SE1/4, All that area NW CA 08974
Section 14	S1/2NE1/4, W1/2, SE1/4
Section 15	NW1/4, N1/2SW1/4, SE1/4, All that area NE of CA 4163
Section 22	NE1/4NE1/4, All that area NE of CA 4163
Section 23	N1/2, NE1/4SW1/4, SE1/4, All that area NE of CA 4163
Section 24	N1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4, All that area NW of CA 8974
Private Lands under County Jurisdiction	
Section 15	NE 1/4

2.3.2.3 Onsite and Adjacent Land Uses

The portion of the Project area located on BLM land is currently undeveloped. The 160-acre private parcel was previously the location of a jojoba farm. A detailed description of the adjacent and nearby land uses is provided in Section 3.10.1.4.

2.3.3 Facilities

The DQSP would consist of a single unit with a generating capacity of 450 MW. The proposed facilities on BLM-managed public land would include solar arrays, gen-tie line, O&M building, internal access roads, groundwater production wells, On-Site Substation, and ancillary facilities. The only facilities to be placed on the private land parcel would be solar arrays, access roads, and power distribution lines. The only linear facilities extending out of the solar plant site would be the gen-tie line, its associated access road, an above-ground electrical service line, and a buried telecommunications line. The primary ingress and egress to the Project would use existing access roads. The secondary access route would require construction of approximately 0.7 miles of new road near the southeastern boundary of the Project.

The number and size of Project-related facilities would vary among the Project alternatives. The facilities associated with the Proposed Action are discussed in detail in Section 2.4, the facilities associated with Alternative 2 are discussed in Section 2.5, and the facilities associated with Alternative 3 are discussed in Section 2.6. The following subsections discuss the characteristics and features of the facilities.

2.3.3.1 Solar Panels and Arrays

The Project would involve the installation of photovoltaic modules mounted on either single-axis horizontal tracker structures, fixed tilt mounting systems, or a combination of these two mounting systems. The solar facility would generate up to 450 MW of alternating current (AC) power. The principal materials used in the PV panels and mounting systems are glass, steel, and various semiconductor metals. The specific type of solar panels to be used would be determined as part of final Project design. The Proposed Action assumes that commercial panels, available to any potential developer, would be used. An alternative that assumes use of thin-film cadmium telluride (CdTe) panels is developed as Alternative 2, the Resource Avoidance Alternative, which is discussed in Section 2.5.

The mounting system for the PV modules would consist of steel posts driven into the ground. The Applicant has conducted a Preliminary Geotechnical Investigation, and estimates that posts for fixed-tilt structures would need to be driven between 4 and 7 feet into the ground, and posts for single-axis tracking structures would need to be driven up to 12 feet into the ground. During pre-construction, the Applicant would conduct more field geotechnical investigations which would include borings to evaluate subsurface conditions. If these field investigations result in identifying a more optimal foundation, then the Applicant may propose other embedded foundation designs, including cement foundations, to BLM and the County. Tilt-brackets would be bolted onto the steel posts, and either steel table frames (for fixed tilt) or tracker structures would be bolted onto to the brackets. The PV panels would then be mechanically fastened to the table frames or tracker structures.

If fixed-tilt arrays, which do not track the sun, are used, they would be positioned in a south-facing orientation at a tilt between 20 and 25 degrees from horizontal (ground surface) to receive optimal solar energy throughout the year. The arrays would be installed in rows oriented in an east-west direction. The maximum height of the fixed-tilt arrays above the ground surface would be 13 feet.

An example of a typical horizontal tracker PV array is shown in Figure 2-3. If single-axis horizontal trackers are used, the PV modules would be mounted horizontally (not tilted to the south). The arrays would be installed in rows oriented in a north-south direction. Panels would be powered by drive motors to track the east-west path of the sun throughout the course of a day. The maximum height of a module on a horizontal tracker during the course of a day would be 13 feet. The minimum height would be approximately 1.5 to 2 feet above the ground surface.

The assemblies would be organized into arrays, as shown in Figure 2-4. Each array would be approximately 800 feet long, and 500 feet wide, but may vary depending on technology and array design. The exact placement of the arrays within the Project area would be based on topography, hydrology, and geotechnical conditions, and may also be modified to avoid environmentally sensitive resources. Prior to ground-breaking activities and issuance of a Notice to Proceed by the authorized officer, all final design features and placement of all Project facilities would be included in the approved POD.

2.3.3.2 Power Distribution

The PV modules would be electrically connected to each other by wire harnesses and combiner boxes that collect power from several rows of modules. Underground direct current (DC) cables would then lead to a Power Conversion Station (PCS), which would be situated within each array. Alternatively, above-ground cables may be used and attached to the array posts 1 to 4 feet above the ground. A typical PCS is shown in Figure 2-5. The PCS would use inverter hardware to convert the DC electric output of the solar panels into grid-quality AC electric output. A transformer located at each PCS would then step up the voltage of the output to medium voltage AC (MVAC) at approximately 34.5 kV, before it is transmitted to one of several PV Combining Switchgear (PVCS) units, which would be housed in cabinets dispersed among the arrays. A typical PVCS is shown in Figure 2-6. Each PVCS would collect power from a group of arrays, and then transmit it to the On-Site Substation through overhead high-capacity collection system lines. As an alternative to the PCS, the low voltage DC would be stepped up to medium voltage DC (MVDC) at several converters throughout the site and transmitted to one or more MVDC to MVAC inverters. The overhead lines would be carried on wood or steel poles with a maximum height of 70 feet. The PCSs, converters, and transformers would be situated on concrete vaults or bases.

The On-Site Substation facility would occupy approximately 2.6 acres in the northwest portion of the Project site. At the On-Site Substation, the voltage of the electricity would be stepped up to match that of the Southern California Edison (SCE) regional transmission grid. The power would be transmitted from the On-Site Substation to the CRSS through the overhead gen-tie line, which would be a maximum of 135 feet tall. The gen-tie line would run north from the On-Site Substation to the existing Corridor K/30-52 along 16th Avenue/Seeley Avenue. The line would then turn west and follow the existing Corridor K/30-52 approximately 2.79 miles to the SCE-operated CRSS, where it would interconnect to the CAISO grid. The gen-tie line would be

included within a 160-foot wide corridor, and be approximately 2.79 miles long, for a total off-facility area of 54 acres.

The Project would also include Energy Storage Systems (ESSs), which are battery storage modules that would allow the facility to continue supplying energy to the grid for up to four hours in the evening after sundown. The ESSs would occupy approximately 15 acres, and would include switchboards; integrated heating, ventilation, and air conditioning (HVAC) units; inverters; transformers; and associated controls. The batteries would be composed of lithium ion, sodium-sulphur, vanadium-redox-flow, or similar technology. The ESSs would be situated in pre-fabricated metal containers located near the On-Site Substation. Each container would have an appropriate fire suppression system designed in compliance with Section 608 of the International Fire Code, as well as apron containment systems to prevent the escape of spills or leaks of fluids. The units would also be designed to comply with Article 480 of the electrical code, which specifies requirements for insulation and venting.

2.3.3.3 Access Roads

Primary and secondary access roads are shown on Figure 2-2. Primary access to the solar facility would be from Exit 236 off of I-10. Traffic would follow S. Neighbours Boulevard (State Route [SR]-78) approximately one mile south to 16th Avenue/Seeley Avenue, and then west approximately 5 miles to the facility gate. This access uses existing roads.

Emergency access to the Project area would be from 22nd Avenue off of SR78. Emergency access from 22nd Avenue would be directly west to Gravel Pit Road. A new road, approximately 0.7 miles long, would be constructed to connect Gravel Pit Road to an entrance gate at the southern tip of the Project site.

For most of its length, the proposed gen-tie line would run parallel to, and approximately 150 feet south of, the gen-tie line for the McCoy Solar Energy Project (MSEP). The existing road used to access the MSEP gen-tie line is 16th Avenue/Seeley Avenue, which runs parallel to, and north of, the MSEP gen-tie line. To use 16th Avenue/Seeley Avenue to access the DQSP gen-tie structure sites, a series of spur roads would be constructed. Each of these spur roads would be approximately 20 feet wide and 100 feet long, and would extend from 16th Avenue/Seeley Avenue north of the MSEP gen-tie line, pass underneath the MSEP gen-tie line, and provide access to the DQSP gen-tie structure locations on the south of the MSEP gen-tie line. Where the gen-tie line turns southwest to enter the CRSS, it would no longer be parallel to the MSEP gen-tie line and 16th Avenue/Seeley Avenue. Along this portion of the gen-tie line, a new access road parallel to the gen-tie line, approximately 20 feet wide and 1,750 feet long, would be constructed. The total length of access roads constructed for the gen-tie line would be approximately 4,000 feet.

Graded, graveled, or otherwise stabilized all-weather internal access roads would also be constructed at selected locations within the Project site. These roads would be required to facilitate transport of large Project components and materials from the staging areas to the construction work areas. Approximately 1.2 miles of existing on-site roads would be stabilized with gravel, and approximately 112.9 miles of additional internal roads would be constructed by compaction and/or stabilization of native soil material. Final placement of roads within the ROW would be identified in the approved POD. The gravel would be obtained locally to the extent

practicable. These internal roads would continue to be used to access the facilities during Project operation and maintenance.

2.3.3.4 Operations and Maintenance Building

The O&M Building would be located adjacent to the On-Site Substation, in the northwest corner of the facility. The O&M Building would be used for parts storage, plant security systems, and monitoring equipment. The O&M Building would include offices, a restroom, and a storage area. The building would rest on a cement foundation, and would be approximately 120 feet by 50 feet in size. A small parking lot and additional storage containers would be located outside of the building. The building would receive backfeed power through the On-Site Substation, with long-term backup provided by a temporary diesel generator or electrical service line. An above-ground water tank would be located at the building, and would be used for drinking water and sanitary purposes. A septic system and leach field located at the O&M Building would serve as the sanitary waste system for Project operations.

2.3.3.5 Meteorological Facilities

The facility would include one or more meteorological stations and an associated data acquisition system (DAS), to collect data for analysis and system monitoring. The DAS would consist of a network of data loggers and programmable logic controllers at each PCS. The data loggers and controllers would be connected to a Wide Area Network and monitored in the O&M Building. Data would also be transmitted off-site, to a remote Network Operations Center.

The meteorological system may include an estimated nine anemometer towers installed around the site perimeter. The purpose of the anemometers would be to measure and communicate wind speed data to the facility control room, so that solar arrays on trackers could be re-positioned for safety in the event of high winds. The anemometer towers would range from approximately 20 to 30 feet high.

2.3.3.6 Power and Telecommunications Utilities

Hard-wired fiber-optic cable would be installed for telephone, internet, and other communications. Underground cables would be installed to connect the site to existing communications cables, located approximately one mile to the north. On the Project site, the communications system would connect to the temporary construction trailer area, the O&M Building, and the On-Site Substation. Alternatively, communications could be provided by microwave to the nearest available telecommunication site that connects to a local provider.

Power to support Project construction would be provided by generators or by an above-ground electrical service line installed along the same route as the underground communication line to an existing service line approximately one mile to the north. Power for operations (when the Project is not producing electricity) would be provided by backfeed power from Southern California Edison's (SCE) grid through the On-Site Substation. Long-term backup would be provided by a temporary diesel generator that would connect to a set of disconnects at the substation, or from the electrical service line installed during construction. A pad and a set of disconnects would be installed to facilitate rapid installation of the generator in the event of an emergency.

A separate communications line and a redundant communication system between the Project and the CRSS will be required by SCE. The separate system would be a fiber optic line attached to the Project gen-tie. The redundant system could be either a buried fiber optic line located in or adjacent to the gen-tie right-of-way, or a microwave system between the Project and the CRSS.

2.3.3.7 Security and Fencing

A guard shack would be located at the facility entrance gate. The shack would be manned by security personnel up to 24 hours per day throughout the construction period.

The perimeter of the solar facility, coinciding with the ROW boundary, would be fenced to provide security. The facility area included within the perimeter fenceline would be approximately 3,714 acres. Fence posts for the perimeter fencing would be set into a concrete footing. In addition, the temporary construction staging areas near the O&M Building (i.e., construction move on area) would be separately surrounded by temporary security fencing. All fencing would be seven feet high, chain-link or wire fence and the upper one foot may be barbed wire. Where required, the base of the fence may include tortoise exclusionary fencing, anchored below the ground surface according to USFWS (2009) guidelines. Because the Project area is almost flat, the fences will not cross any defined surface water drainages. Gates in the fencing would be situated at roads entering or exiting the facility. Two gates off of 16th Avenue/Seeley Avenue would be installed as entrances to the temporary construction area on the northern perimeter of the facility. A gate would be installed off of 16th Avenue/Seeley Avenue at the O&M Building. A gate would be installed at the southern end of the facility, to provide access from Gravel Pit Road. There would be no external roads along the outside of the fence.

Site security would be provided 24 hours per day, 7 days per week, through a combination of the fencing, lighting, security patrols, and remote monitoring by electronic security systems. Surveillance systems such as security cameras, motion detectors, or heat sensors may be installed along the site perimeter.

2.3.3.8 Water Supply

The facility would require the use of water during both construction and operations. During construction, water would be used for fugitive dust control, soil compaction associated with site preparation and grading activities, sanitary purposes, and fire protection. The rate at which water would be used would depend on the timing and intensity of construction. The duration of Project construction is expected to be between 25 to 48 months. The shorter estimate would require more intensive water use, and therefore a higher rate of water use. The longer estimate would use water at a slower rate because less disturbance would occur at any given time compared to the shorter construction schedule, but would result in a greater amount of water use overall because the water use for dust control would be required for a longer period of time. The Applicant estimates that the 25-month construction timeframe would require a total of approximately 1,400 AF of water, or 700 AFY, and that a 48-month construction timeframe would require approximately 1,800 AF of water, or 450 AFY.

No water use is required for electricity generation during operations except for washing of solar panels. Water use would be required for sanitary purposes, fire protection, dust control, and vegetation management. No water would be used to irrigate landscaping. The Applicant estimates that operations would require up to 38 AFY, including 18 AFY for panel washing, and

20 AFY for other combined purposes. An aboveground process water/firewater storage tank would be located adjacent to the O&M Building, and would be supplied either with water piped from a proposed on-site well, or from trucks delivering from sources off-site. The size and dimensions of the tank would be determined based on Riverside County Fire Department requirements for firewater storage.

The Applicant plans to obtain water for construction from newly installed onsite wells. However, testing has not been done to verify if this is feasible. If onsite production is not feasible, then water would be transported to the site by truck. This PA/EIS/EIR analyzes the impacts of both options.

If onsite groundwater is used, as proposed, a well to support construction, operations, and decommissioning would be installed west of the O&M Building, and water would be piped through a water line to the above-ground storage tank. Water trucks would be filled at the above-ground tank, and would transport water for use at active construction locations. A second, temporary well, to be used only during construction, may be installed either along the southwest perimeter of the facility, or along the southeast perimeter.

An off-site water supply may be required as a temporary water source before a water supply well can be installed, or may be needed throughout the duration of construction if onsite production is not feasible. In the scenario where no well is installed and all water is delivered by truck, there would be an estimated 57,000 truck trips required for water delivery during construction. The source of this water would be the Palo Verde Irrigation District (PVID), which obtains water from the Colorado River through Priority 1 and Priority 3 rights pursuant to a 1933 Water Delivery contract with the United States. The water would be accessed from a pump station located along Neighbours Boulevard, just north of West 11th Street (URS 2016a). Acquiring this water from any other source, such as the PVID canals, would require a separate environmental analysis.

2.3.3.9 Sanitary Facilities

Sanitary needs during construction would be served by the use of portable toilets. Portable toilets would be serviced by licensed contractors, and waste would be regularly pumped and hauled to proper offsite disposal facilities.

During operations, sanitary needs would be supplied by a septic system and leach field located near the O&M Building. The volume of sanitary waste during operations is expected to be no more than a few hundred gallons per day. The onsite sanitary system would require construction and annual operating Onsite Wastewater Treatment System (OWTS) permits from the County. The Applicant would conduct soil percolation tests to verify that an on-site septic system and leach field is feasible at the proposed location. The specific location of the system would be determined based on the results of percolation tests.

2.3.4 Construction

2.3.4.1 Preconstruction Surveying and Staking

The first activities conducted as part of construction would be fencing of the construction area, wildlife clearance, and surveying and staking of facility locations.

Field topographic surveys would be conducted to obtain detailed topographic information, with one-foot interval accuracy, needed to support the final grading plan and stormwater management system. The surveys would be conducted using photogrammetry and field cross sections. The grading plan would be supplemented with a review of historical aerial photographs to determine changes in land use and stream channel configurations.

Prior to mobilizing heavy equipment, the construction work area would be fenced with tortoise exclusionary fencing. The exclusionary fence may be temporary in nature, or may be installed at the base of the perimeter security fence. Whether the tortoise exclusionary fence is temporary or long-term in nature, it will be designed and installed to match specifications contained in the USFWS (2009) guidelines. Once exclusion fence is established, biological surveys, clearance, relocation, and/or transplanting would be conducted, as determined necessary. These activities could include clearance surveys for Mojave desert tortoise and other sensitive species (e.g., Mojave fringe-toed lizard); translocation for Mojave desert tortoise; seasonal avoidance of nesting birds, including burrowing owls; passive relocation of burrowing owls, as necessary; and possible transplantation of sensitive plant species and species listed under the California Desert Native Plants Act.

Simultaneous with the field surveys, the locations of Project facilities would be surveyed and staked. Facilities to be staked would include the locations of internal roads; buried electrical lines; PV arrays; ROW and construction area boundaries; temporary work areas; areas to be graded or excavated; transmission structure centers; foundation structures; and offsets designated for protection of biological or cultural resources. A construction Stormwater Pollution Prevention Plan (SWPPP) would be developed, and would be used to develop the grading plan and any necessary stormwater management structures.

2.3.4.2 Temporary Construction Facilities

Several construction areas, some situated within the permanent ROW and others outside of the permanent ROW, would be developed to support construction activities. These areas would be used during construction for office trailers, temporary equipment laydown areas, pulling sites for the gen-tie line, and temporary access roads for construction sites. Once construction is completed, the areas situated within the permanent ROW would be converted to other uses to support operations. The areas situated outside of the permanent ROW would be restored.

Two staging areas to be used for support of construction of the solar arrays would be located on the northern site boundary, with a gated entrance off of 16th Avenue/Seeley Avenue. These areas, shown on Figure 2-2, would consist of a 28 acre laydown area, and a 15 acre Move-On Area for temporary construction trailers and parking. Temporary access roads located in this area would total approximately 4.5 acres. These areas, and the associated roads, are located outside of the permanent ROW, and would be restored upon completion of construction.

Construction of the gen-tie line would be supported by a temporary office trailer, gen-tie structure sites, spur roads, pulling sites, and laydown area. Most of these areas would be situated within the 160 foot wide permanent gen-tie ROW. However, construction activities would require an area larger than the permanent ROW, so portions of these areas would only be used temporarily during construction. The acreages of the temporary construction areas outside of the permanent ROW are summarized in Table 2-4. The total area of temporary construction areas outside of the perimeter ROW, including 47.5 acres for the staging areas and roads near the

facility entrance and 13.8 acres associated with gen-tie line construction, would be approximately 61 acres.

Two construction areas located on the southwestern and southeastern Project boundaries would be included within the perimeter fence and would remain part of the ROW after construction. These two areas, comprising 28 acres, would be used as equipment laydown and assembly areas.

All staging areas would be un-paved and un-graveled, but would be treated with dust palliative and water as necessary to control dust. One or more temporary water storage ponds or tanks would be utilized during construction. Hazardous materials storage for construction would be located in one of the temporary laydown areas. Stormwater management features for protecting the staging areas from stormwater damage would be included within the construction SWPPP.

Construction materials would be stored in the staging areas in uncovered rows, grouped according to the type of material: steel piles, PV modules, table frames, tilt brackets, hardware, electrical cables, and other categories. Electrical equipment, such as transformers, PVCSs, and PCSs, would not be shipped until they are ready to install, so would not be stored in the staging areas. Aggregate for road construction and foundations would be delivered to the site at a rate proportional to its use, so would not require substantial storage areas.

2.3.4.3 Site Preparation

Operation of the solar panels, safe and effective movement of workers and materials throughout the site during construction, and management of stormwater would require site preparation to remove vegetation, and create a flat and compacted surface. Soil would be compacted to a level that allows delivery trucks, pile driving equipment, and cranes to move across the site. After grading and underground work, most areas would be compacted to approximately 85 percent of its maximum dry density. The exact locations to be prepared, and techniques to be used for site preparation, would be determined in a final site grading plan following the pre-construction surveys and included in the approved POD prior to actual ground disturbance and issuance of a Notice to Proceed by the authorized officer.

The preferred methods for site preparation would be either mowing or a disk contour grade and roll method and compaction of vegetation throughout most of the Project site. These methods would be used for approximately 88 percent of the Project area. These methods are preferred because they would leave topsoil and vegetative matter in place. Where feasible to use these methods, vegetation would be mowed or disked under, mulched or composted, and retained on-site to assist in erosion control and to limit waste disposal. Plant root systems would be left in place, to the maximum extent practicable, to provide soil stability.

Mowing and disk and roll site preparation would be performed using conventional farming equipment including tractors with mowing or disking equipment and vibratory rollers. In the disk and roll method, rubber-tired tractors would tow disk harrow equipment to treat the top 5 to 7 inches of soil. Each tractor would be followed by a water truck, which would use water to keep fugitive dust emissions to acceptable levels. The disk would incorporate the roots, topsoil nutrients, and seed bank into the soil. Following disking, a drum roller would be used to flatten the surface and return the soil to a compaction level similar to the preconstruction stage. In some areas, there may be limited use of scrapers to perform micrograding to reduce mounds greater than six inches in height. This technique would leave the macro-level topography and stormwater drainage unchanged, but would produce a level surface needed for worker safety.

A topographic map of the Project area is shown in Figure 2-7, and a more detailed view of the Project site is shown in Figure 2-8. Figure 2-8 shows the areas where cut and fill would be used in limited areas to fill depressions to stop water from pooling, and to maintain a consistent grade throughout the Project site. The cut and fill methods would be used for approximately 12 percent of the Project area. Areas which would be occupied by structures, including the O&M Building, On-Site Substation, access roads, PCS and PVCS vault areas, temporary construction area, and anemometer towers, would be graded and compacted to meet engineering specifications for those facilities. The Applicant's preliminary grading plan indicates that cut and fill depths can be minimized, and no import or export of soil material would be required, as the amount of cut and fill would be balanced on-site.

Topsoil removed through grading in these areas would be stockpiled and used for post-construction reclamation of temporarily-disturbed areas, or for balancing cut-and-fill needs throughout the Project area. Vegetation in cut and fill areas, roadways, locations of concrete foundations, and locations of stormwater management structures would be removed, after necessary permits for removing desert vegetation are obtained from the County of Riverside, as required by the California Desert Native Plants Act. Vegetation from these areas would be mulched and redistributed within the construction area for soil stabilization. Cut and fill grading would be timed to minimize the duration in which open, uncovered ground would be exposed, and thereby minimize dust and erosion issues.

Concrete would be used to construct foundations for the On-Site Substation equipment, the O&M Building, fence footings, and transmission structure footings. Concrete pads, foundations, and vaults may include both pre-cast and poured-in-place construction methods. Concrete would be obtained from local sources, as much as practicable, and the Applicant does not propose construction of an onsite cement plant.

2.3.4.4 Assembly and Installation of Solar Arrays

Assembly and construction of solar arrays would be completed in two stages. The specific sequence of construction within the Project site would be developed during final Project design.

The first step of construction following site preparation in each area would be the digging of trenches and installation of underground AC and/or DC cables to a depth of three feet. The underground DC cables would connect each row of panels with the PCS, and the underground AC cables would connect the PCSs and transformers to the PVCSs. Alternatively, these facilities may be connected through above-ground cables approximately 1 to 4 feet off of the ground. At the same time, cement foundations for the inverter enclosures and transformers would be prepared. If DC converters are utilized, there would be no PCS, rather DC cables would be placed underground or above ground to the converters. The trenched areas would be backfilled once the cables are buried, and the previous contours would be restored. Although the construction area would be surrounded with Mojave desert tortoise exclusion fence, the trenches would be excavated with slope inclines at various intervals in order to allow egress and prevent entrapment of wildlife.

Following installation of cables in an area, the next step would be to install the vertical support posts for the mounting system for the solar panels. The posts would be driven using small, tracked-vehicle-mounted post drivers. The module frames would then be attached to the posts using prefabricated tilt brackets, and the PV panels would be attached to the frames using

brackets. The PV modules and module framing assemblies would be delivered to the construction staging area in containers on tractor-trailers. The PV modules and the assemblies would be lifted from the tractor-trailers and placed adjacent to the array locations. Wire harnesses, held to the panels by brackets, would connect the PV modules to the electrical collection system.

2.3.4.5 Power Distribution

The PCS enclosures would be pre-fabricated and delivered to the site. They would be installed on cement vaults, foundations, or piers within each block, and would be connected to incoming power lines from the combiner boxes. DC converters on concrete bases may be installed rather than utilizing PCSs. The modules would use standard touch-safe wiring connectors, and workers would walk behind each row and plug the wires from each module into the wiring harness, and then the wiring harnesses into a combiner box. The combiner boxes would then be connected to the DC cables that lead to the PCS enclosure and transformer. The transformers would then be connected to the AC cables which lead to each PVCS. From the PVCS, power would then be transferred by overhead lines to the On-Site Substation. The On-Site Substation would step the power up for transmission to the CRSS through the gen-tie line.

All electrical work would be conducted by certified electricians. Utility journeymen would perform or supervise the high-voltage electrical work for the On-Site Substation and gen-tie line.

The overhead power lines from the PVCS to the On-Site Substation, and for the gen-tie line, would be strung overhead on the supporting transmission structures. Heights of structures would vary depending on the electrical clearances required, but would be lower than 70 feet for the on-site overhead lines and 135 feet for the gen-tie line.

2.3.4.6 Gen-Tie Line

The ROW and structure locations for the gen-tie line would be surveyed and marked during preconstruction surveying. A laydown yard for materials required for the gen-tie line would be developed within the Project area. Access roads, including a road for gen-tie line maintenance and temporary roads for access for construction vehicles, would be cleared and graded. Temporary sites for pulling and tensioning would be developed by grading a level area. Specific locations for puller and tensioning sites would be developed following detailed design of the gen-tie line. These locations may lie outside of the 160 foot wide ROW, but would be located within the 600-foot wide gen-tie study area used to determine the proposed routing for the gen-tie line corridor, authorized through a short-term right-of-way for construction, and identified clearly in the approved POD prior to issuance of a Notice to Proceed. Temporary work areas would also be mapped for reference and established around each transmission structure, to enable pole assembly and erection.

Long-term disturbance would be limited to areas within the 160-foot-wide ROW corridor, but temporary disturbance for the puller and tensioning sites may occur outside of the ROW. Some disturbance has been assumed for the entire 160-foot wide ROW, but once any construction areas to enable pole assembly and erection have been restored, would physically consist only of the 20-foot wide access spur roads and footprint of each transmission tower. A short-term ROW would be obtained to authorize temporary puller and tensioner sites.

Following site preparation, foundations would be installed at each transmission structure location. The exact type of foundation would vary, depending on the type of structure developed in the final design. Foundations may include drilled-shaft anchor-bolted foundations, drilled-shaft embedded foundations, or vibrated steel casings.

The transmission structures for the gen-tie line would be delivered to the laydown yard for storage, and then transferred from the laydown yard to their installation location as needed. The structures would be assembled in sections on cribbing that provides for the proper alignment of the steel members. Steel sections would be laid out with hydraulic cranes. The pole base and top sections would be assembled at each structure site. Insulators and hardware may be placed on the structure prior to its erection.

The gen-tie line structures would be constructed of tubular steel monopoles. A crane would be used to set the pole base sections onto each foundation. An electrical grounding crew would then install the grounding, and test the ground resistance. The structures would be no higher than 135 feet.

The cable for the gen-tie line would be strung using conventional wire stringing using tension stringing equipment. The wires would be sagged in accordance with specified sagging data, corrections, and offsets. The wires would be dead-ended on the dead-end structures and clipped-in on the tangent and angle structures.

2.3.4.7 Construction Schedule

The Applicant would construct the solar facility and gen-tie line simultaneously, over a 25- to 48-month period. Construction is expected to typically occur from 7:00 a.m. to 5:00 p.m., Monday through Friday. However, work in the early morning, evening, or nights and on weekends during certain construction phases may be necessary. The work schedule may also be modified to account for weather conditions during the year, such as starting the workday earlier in the summer months to avoid work during the hottest part of the day for health and safety reasons. In addition, for safety reasons, certain construction tasks, including final electrical terminations, must be performed after dark when no energy is being produced. Any nighttime work would be conducted using restricted, task-specific lighting, as needed in order to provide a safe workplace. Lights would be focused downward, shielded, and directed toward the interior of the site to minimize light exposure to areas outside the construction area. Construction work taking place outside of typical hours would comply with Riverside County standards for construction noise levels.

2.3.4.8 Construction Equipment and Workforce

The Applicant estimates that the construction workforce would average approximately 450 employees over the construction period, and would have a peak workforce of approximately 810 employees, resulting in an estimated 1,620 daily commuting trips. The construction workforce would be recruited from within Riverside County and elsewhere in the surrounding region to the maximum extent practicable. Construction would also involve an estimated 300 daily trips by 50 vehicles to deliver materials to the Project site.

The majority of the construction equipment and vehicles would be brought to the construction site at the beginning of the construction process, and would remain on-site throughout the

duration of the construction activities. Transport and delivery of equipment and materials would be done in accordance with a traffic monitoring and control plan, as described in Section 4.17.2, to minimize short-term impacts associated with temporary use of the roads. Equipment would generally not be driven on public roads while in use for the Project. Traffic on public roads would include construction worker commuting vehicles, periodic truck deliveries of materials and supplies, and periodic truck removal of recyclables and wastes. A total of approximately 14,400 truck deliveries of materials are anticipated throughout the construction period for the Proposed Action and Alternative 2, and approximately 10,800 truck deliveries would be required for Alternative 3.

In addition to truck deliveries of materials, truck deliveries of water for construction may be used. Although groundwater from on-site wells is the anticipated source for construction water needs, in the event an on-site source is not available, it may be necessary to truck water from an off-site source. If trucking water is required for the entire 25 month construction period, up to approximately 57,000 water truck deliveries (assuming 8,000 gallon capacity water trucks) could potentially be required. The Applicant would schedule truck deliveries and shipments to avoid the peak traffic hours in the morning and evening. Materials would generally be delivered within approximately two weeks prior to its use, except for electrical systems (PCSs and PVCSs), which would be received just prior to installation.

2.3.4.9 Construction Hazardous Materials and Wastes

As shown in Table 2-2, chemicals used onsite during construction are primarily fuels and lubricants associated with motorized vehicles and equipment, solvents and adhesives used for assembly of solar modules, and soil stabilizers to be used for dust control. Procedures to be used for management of hazardous materials used onsite during construction are discussed in Section 2.3.7.1.

Table 2-2. Non-Semiconductor Chemicals at Project Site During Construction

Product	Use
Diesel Fuel	Vehicles
Gasoline	Vehicles
Motor Oil	Vehicles
Hydraulic Fluids and Lube Oils	Vehicles and Equipment
Solvents and Adhesives	PV Module Assembly
Soil Stabilizers	Roads and PV Table Areas

Diesel and gasoline fuel storage during construction is estimated to be approximately 2,500 gallons each; storage will include refueling tanks, generators, portable light stands, and other small stationary containers.

Wastes generated during construction of the Project would include broken PV modules, wood, concrete, and miscellaneous packaging materials. A summary of the expected solid wastestreams, volumes, and expected recycling or disposal, for construction is presented in Table 2-3. The proposed methods for managing sanitary wastes during construction are discussed in

Section 2.3.3.9. Procedures to be used for management and disposal of other wastes during construction are discussed in Section 2.3.7.1. The potential for releases of hazardous materials, and the risks associated with potential releases, are discussed in Section 4.9.3.

Table 2-3. Generation and Disposal of Solid Wastes Associated with Construction

Waste	Origin	Composition	Estimated Quantity[1]	Classification	Disposal
Scrap wood, steel, glass, plastic, paper	Construction activities	Normal refuse	1,200 tons (14,160 cubic yards)[1]	Nonhazardous	Recycle and/or dispose of in industrial or municipal landfill
Scrap metals	Construction activities	Parts, containers[2]	<12 tons (<168 cubic yards)	Nonhazardous	Recycle and/or dispose of in industrial or municipal landfill
Waste oil filters	Construction equipment and vehicles	Solids	3,000 lbs.	Used Oil	Recycle at a permitted Treatment, Storage, and Disposal Facility (TSDF)
Oily rags, oil sorbent excluding lube oil flushes	Cleanup of small spills	Hydrocarbons	600 cubic ft.	Used Oil	Recycle or dispose at a permitted TSDF
Spent lead acid batteries	Construction machinery	Heavy metals	60	Hazardous	Recycle or dispose offsite at a Universal Waste Destination Facility
Spent alkaline batteries	Equipment	Metals	300 lbs.	Universal waste solids	Recycle or dispose offsite at a Universal Waste Destination Facility
Waste oil	Equipment, vehicles	Hydrocarbons	3,000 gallons	Used Oil	Dispose at a permitted TSDF
Sanitary waste	Portable toilet holding tanks	Solids and liquids	1,200,000 gallons	Nonhazardous liquid	Remove by contracted sanitary service

Notes:

1 – Quantities were provided by Applicant in the form of tons per 150 MW phase of construction. Those quantities have been multiplied by 3X to estimate the total quantity associated with construction of the 450 MW Project, and then converted from tons to cubic yards using the conversion factor for wood construction debris (11.8 cubic yards/ton) and scrap metal (14.0 cubic yards/ton) in EPA 2016a.

2 - Containers include <5-gallon containers and 55-gallon drums or totes

2.3.5 Operations and Maintenance

Operations and maintenance of the solar facility and gen-tie line require minimal activities on the part of the operator. The facility operates passively, with no fuels, no thermal cycle, and no need for water use for electricity generation except for washing of solar panels. No water would be used to irrigate landscaping. The primary operational activities would be maintaining the solar panels, electrical systems, and gen-tie line; providing security; and maintaining access for maintenance and security.

The access roads and aisles between rows of solar panels would require occasional vegetation management and correction of minor erosional features or ruts caused by vehicle use. The Project areas covered by solar modules allow vegetation to grow. Dust would be washed from solar panels up to twice per year.

The workforce to perform for operations, maintenance, and site security purposes is estimated to be up to 5 full time workers. Workers are expected to operate in two 12-hour shifts. The workforce would generate up to 5 round-trips for commuting each day. During operations, potable water for drinking and sanitary purposes would either be trucked into the site from Blythe, or would be supplied by an onsite groundwater well.

Operations and maintenance would require occasional delivery of materials for replacement of solar panels and electrical equipment. Up to 10 delivery trucks per day may be required, when such replacements are scheduled.

Further maintenance is also required to assure soil stabilization and vegetation restoration of temporary disturbance sites. These sites would be restored using methods defined in the Revegetation Plan.

During operation, the only hazardous materials used onsite would be fuels and lubricants for vehicles, emergency generators, and other equipment. Procedures to be used for management of hazardous materials used onsite during operations are discussed in Section 2.3.7.1. The potential for releases of hazardous materials, and the risks associated with potential releases, are discussed in Section 4.9.3.

Electrical generating activities would not produce hazardous or other industrial waste. The Applicant would use transformers that contain biodegradable oil, rather than mineral oil. Wastes generated during operations would include broken solar panels, spent batteries, office-related refuse generated by workers, and wind-blown debris caught against the perimeter fence or between panels. If hazardous materials are released from their containers and/or containment areas during their storage or use, contaminated soil would be generated as a result of response or remediation activities. The proposed methods for managing sanitary wastes during operations are discussed in Section 2.3.3.9. Procedures to be used for management and disposal of other wastes during operations are discussed in Section 2.3.7.1.

2.3.6 Decommissioning

If the ROW grant is not renewed beyond the 30-year operational period, or the Project ceases for other reasons, the ROW grantholder would be responsible for removal of the Project facilities and restoration of the public land through decommissioning. The Applicant has developed a Draft Decommissioning and Site Reclamation Plan (Desert Quartzite 2015) which describes the general outlines of the proposed activities. The Draft Decommissioning and Site Reclamation

Plan would be updated and finalized prior to decommissioning to ensure that the Project area would be restored according to applicable regulations and site conditions in effect at that time.

Prior to decommissioning, preparation activities would occur. A Phase I Environmental Site Assessment would be conducted to document existing conditions, including the potential presence of hazardous materials or conditions. All hazardous materials would be removed from the site before structures are removed. Containers for hazardous materials and petroleum fuels would be rinsed clean, when feasible, and the waste liquid collected for off-site disposal. Phase II environmental sampling and, if needed, remediation would occur in areas where hazardous materials were stored, and in any areas where releases during construction or operations were documented. The leach field would be removed, and the area sampled to identify and address any remaining contamination. Prior to beginning decommissioning, a decommissioning SWPPP would be developed and implemented, to decrease the potential for release of contaminants to the environment and contact with stormwater.

Decommissioning would include removal of all aboveground and near-ground facilities, including the PV arrays and supporting electrical and facility systems. The PCSs, PVCS cabinets, gen-tie line, and On-Site Substation would be de-energized, dismantled, and removed in accordance with all Federal, state, and local regulatory requirements. Some structures would be removed only to a depth sufficient to allow site restoration, as has been authorized by BLM on similar projects. Concrete foundations would be removed to a depth of three feet. The underground cables that comprise the DC power collection system would be cut off and left in place at a depth of three feet. Poles associated with the 12 kV distribution line would be removed to a depth of three feet. The plan for decommissioning the facilities, including the O&M Building, parking areas, water storage tank, access roads, fencing, lighting, gen-tie line, and related infrastructure would depend on the planned future use of the site. If a reuse proposal for the site is received prior to decommissioning, some items may be left in place for use by that development. However, the approved decommissioning plan would assume such a proposal does not exist and would encompass removal of all Project facilities and reclamation of the public land to pre-application conditions.

Once removed during decommissioning, all equipment and infrastructure would be recycled or resold as practicable, or disposed of in compliance with applicable laws. Removed materials and debris would be broken down into pieces of a manageable size onsite, so that they can be safely transported offsite. Most of the Project facilities would be composed of materials that can be recycled, including glass, semiconductor material, aluminum, steel, and wiring. Project materials to be removed from the site and recycled or resold include the steel tables and posts, wiring, and PV modules themselves. PV modules and other products used during construction and operation of the Project are generally not hazardous and are not subject to Federal or state hazardous material management regulations. If used, CdTe PV modules are currently characterized as Federal non-hazardous waste, but may be characterized as a California-only hazardous waste.

If no other uses are planned, the site would be restored to mimic the original pre-application topography. The Project area soil and vegetation would be restored to their preconstruction condition or analog condition to reflect climate change, with native vegetation similar to plants in the surrounding vicinity or as approved by the authorized officer. Upon removal of the infrastructure, the disturbed soil would be stabilized using erosion control Best Management Practices (BMPs) until final measures for restoring ecosystem functions can be implemented. Topsoil, brush, rocks, and natural debris would be distributed so that the site visually blends in

with the surrounding landscape, and to facilitate re-vegetation. Compacted soils would be de-compacted. Revegetation would include a combination of natural regeneration, mechanical re-seeding, planting of nursery stock, and transplanting local vegetation. Soil disturbance by mechanical means would be minimized to prevent invasions of non-native plant species and to maintain soil fertility.

Following decommissioning, monitoring would be conducted to verify whether restoration is successful or additional interventions for restoration are warranted. Reference sites would be established to allow comparison of the re-vegetation effort with adjacent undisturbed sites. Success standards, including metrics, would be established. Monitoring would be conducted using line and belt transects and quadrat or circular plot techniques. Results would be reported to the applicable agencies for review to determine if restoration was achieved as determined by the BLM Authorized Officer.

Decommissioning is expected to take up to a year to complete. The types of equipment, workforce, and traffic associated with decommissioning are expected to be similar to those used for construction. Monitoring will begin at the end of decommissioning, and is expected to continue for one to three years, or until the site meets success criteria.

2.3.7 Applicant-Proposed Management Plans and Mitigation Measures

The Applicant has proposed a variety of management procedures and mitigation measures, to be implemented during construction, operations, and decommissioning, to ensure compliance with all permit conditions, avoidance of environmental impacts where possible, and mitigation, reduction, and/or compensation for environmental impacts where avoidance is not possible. These measures are discussed, with respect to each applicable resource, within the resource sections of Chapter 4.

Prior to construction, the Applicant would develop and implement an Environmental Inspection and Compliance Monitoring Program, that would provide an over-arching program covering all environmental resources, permits, and mitigation measures. A qualified individual would be assigned to serve as the Project's Environmental Manager, with responsibility for implementation of the program. The Environmental Manager would be responsible for:

- Development and implementation of the overall Project compliance program;
- Communication and coordination with the applicable regulatory agencies;
- Ensuring compliance with the APMs, agency-required mitigation measures, and various conditions and requirements of permits and approvals;
- Record keeping and reporting required by permits and approvals;
- Ensuring that all applicable environmental plans are up to date;
- Advising management of actual and potential compliance issues; and
- Ensuring that Project planning takes appropriate account of compliance issues in advance.

2.3.7.1 Hazardous Materials and Waste Management

The Applicant's procedures for management of wastes, handling of hazardous materials, prevention of releases of hazardous materials, and plans for responding to emergencies would be specified in a variety of permits and plans required by various agencies. The Applicant has developed a Preliminary Hazardous Materials Management and Emergency Response Plan, which describes the issues to be addressed in a completed Plan prior to the beginning of construction. The completed Plan would specify BMPs, including storage, management, and disposal procedures, to be used during construction, operations, and decommissioning. BMPs to be implemented as part of the completed Plan would include:

- Keep materials in their original containers with the original manufacturer's label and resealed when possible;
- Avoid storage of excessive quantities of chemicals by procuring and storing only the amounts needed;
- Store hazardous materials in secondary containment, including associated inspection and maintenance procedures to ensure proper function of the secondary containment;
- Follow manufacturer's recommendation for proper handling and disposal;
- Conduct routine inspections to ensure that all chemicals on-site are being stored, used, and disposed of appropriately;
- Perform timely maintenance on vehicles/equipment that are leaking oil or other fluids, and place drip plans under the leak when the vehicle/equipment is parked prior to the maintenance event;
- Encourage mobile refueling of vehicles onsite to minimize stationary tank storage of fuel and other hazardous materials;
- Ensure that no hazardous materials, chemicals, fuels, or lubricating oils would be stored within 100 feet of any wetland, water body, or water supply well, or within any designated municipal watershed;
- Refuel all construction equipment at least 100 feet from any water body, water well or wetland;
- Ensure that all personnel dealing with hazardous materials are properly trained in the use and disposal of these materials in accordance with local, state and Federal regulations;
- Maintain Material Safety Data Sheets available on the site for use during Project construction and operation; and
- Notification and response actions to be taken in the case of discovery of unanticipated hazardous materials.

Chemicals would be stored in appropriate containers, in an enclosed and secured location such as portable outdoor hazardous materials storage cabinets equipped with secondary containment to prevent contact with rainwater. During construction, chemical storage cabinets may be moved to different locations throughout the site, to provide workers access to the chemicals as the location of work activities moves. Chemical storage areas would be designed to not be located immediately adjacent to any drainage, and protection of the locations from stormwater damage

would be evaluated within the construction SWPPP. Waste lubricating oil would be recovered and recycled by a waste oil recycling contractor. Bulk chemicals are not expected to be used on-site, with most materials being stored in small-volume, returnable delivery containers. All chemical storage areas would be designed to contain the spread of leaks and spills within containment areas.

The Preliminary Hazardous Materials Management and Emergency Response Plan also summarizes planning and response procedures for fire, spill, and explosion emergencies. The completed Plan would specify employee roles and responsibilities for hazardous materials management, waste management, and emergency response; emergency response and communication procedures; and requirements for posting emergency information and training employees.

The Applicant has developed a preliminary summary of a construction SWPPP, which would be developed and implemented prior to Project construction. In addition to stormwater control procedures discussed in Section 2.3.7.9, the SWPPP would include requirements for hazardous materials storage and handling in order to protect water quality. These would include prohibiting the storage of hazardous materials or re-fueling of vehicles within 100 feet of a wetland, water body, or water supply well.

As specified in the Preliminary Hazardous Materials Management and Emergency Response Plan, the Applicant would avoid storage of excessive quantities of chemicals by procuring and storing only the amounts needed. Therefore, the amount of each hazardous material present onsite at any given time is expected to be limited.

The Applicant proposes to store up to 2,500 gallons each of diesel and gasoline during construction, which exceeds 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous substances above the threshold planning quantity. As a result, the Applicant would develop and implement a Hazardous Materials Business Plan (HMBP) in coordination with Riverside County Department of Environmental Health and County fire officials. In addition, because the Project would involve onsite storage of more than 1,320 gallons of oil or oil products, the Applicant would develop and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan. The Applicant has developed a summary outline of an SPCC Plan, which describes the issues that would be addressed in a completed Plan. Issues to be addressed would include a diagram showing the facility and locations of oil storage, description of the type of oil, methods used to prevent and control releases, and requirements for inspections, testing, employee training, and reporting. Appropriately sized and supplied spill containment kits would be maintained onsite in the area of the O&M Building, and operations employees would be trained on the appropriate spill prevention, response, and containment procedures.

The completed Hazardous Materials Management and Emergency Response Plan would identify expected wastestreams; specify how waste would be sampled, analyzed, and characterized; and specify potential waste disposal locations for different categories of wastes. Elements of the Plan relevant to waste management would include waste determination procedures, waste disposal locations, container management, inspection requirements, preparedness and prevention requirements, and requirements for packaging, placarding, manifests, and record-keeping and reporting. Disposal of any excess materials and wastes would be performed in accordance with local, state and Federal regulations, and any excess materials or waste would be recycled or

reused to the maximum extent practicable. Any equipment broken or requiring replacement would be removed offsite for recycling or disposal.

PV modules damaged during construction, operations, or removed at the end of the Project life would either be recycled, or would be disposed of in accordance with local, state, and Federal regulations. The disposal would depend on the specific semi-conducting material used in the solar panels. Some materials, such as CdTe PV modules, may be regulated as a California-state hazardous waste.

The batteries in the ESS units would be regulated as hazardous waste under Title 22, California Code of Regulations §§ 66273.9 and 66273.2. The disposal of the batteries would be managed under a Hazardous Materials Business Plan, either a new plan developed with the Certified Unified Program Agency, or through an existing plan.

2.3.7.2 Vegetation Management

The Applicant and the BLM would jointly develop a Vegetation Resources Management Plan (VRMP) to be implemented at the Project site. The VRMP would be developed in coordination with and approval by Riverside County and the BLM to determine the best methods and species to employ. The Plan would include identification of special-status plant species that could be impacted by Project activities; any required mitigation for special-status plants; and proposed methods for revegetation of temporarily disturbed areas with native species. The Applicant has conducted focused surveys for special status plant species, and the results of those surveys have been used to develop Project alternatives that would avoid, to the maximum extent practicable, impacts to special status plant species.

The Applicant has developed a Draft Integrated Weed Management Plan (IWMP; provided in Appendix J), which would be a component of the VRMP, to control invasive and exotic weeds. The IWMP was developed in accordance with BLM's Vegetation Treatments Using Herbicides Final EIS (2007), and the Applicant would acquire and comply with any required permits for the use of herbicides or pesticides. The Plan would be finalized with the assistance of plant ecologists on staff and/or engaged by the BLM, as described in Applicant-Proposed Measure (APM) BIO-5.

The final plan would also address prescriptions for temporarily disturbed sites, including the possibility of allowing BLM access to these areas to test new and emerging strategies and management practices for improvement in reestablishing native vegetation. Experimentation in these areas would be allowed so long as they do not conflict with facility operation.

2.3.7.3 Fire Prevention and Control

The Project area has limited potential for wildfire. The area is sparsely vegetated, and vegetation onsite would be salvaged if required or otherwise crushed or removed through mowing or disking during Project construction. The Project is not located adjacent to wild lands with a high fire potential.

The Applicant would coordinate with Riverside County to ensure that appropriate measures are implemented to control the risk of fire. An aboveground water storage tank may be maintained adjacent to the O&M Building, and may be sized to meet Riverside County Fire Department requirements, as applicable, to supply sufficient fire suppression water during operations.

Additional fire protection measures would include sprinkler systems in the O&M Building; a FM200 fire suppression system, or equivalent, in the facility control room at the O&M building; and portable carbon dioxide (CO_2) fire extinguishers mounted at the power conversion system units. All Project facilities would be designed, constructed, and operated in accordance with applicable fire protection and other environmental, health and safety requirements.

Fire prevention and response would be addressed in the Hazardous Materials Management and Emergency Response Plan for construction and operation. The plan would comply with applicable Riverside County regulations, and would be coordinated with the Riverside County Fire Department and BLM.

During construction, electrical equipment would only be energized after the necessary inspection and approval, so there is minimal risk of any electrical fire. Workers would monitor fire risks during both construction and operation, to ensure that prompt measures are taken to mitigate identified risks. In addition, transformers located on-site would be equipped with coolant that is non-flammable, biodegradable, and contains no polychlorinated biphenyls or other toxic compounds. The network of access roads would be developed to ensure that there is adequate access for fire control and emergency vehicles to the site.

2.3.7.4 Health and Safety

The Applicant would develop and implement an Environmental Health and Safety Plan to ensure that all construction and operations activities are safe, and comply with all local, state and Federal regulatory requirements. The plan would be based on existing plans for similar solar facilities operated by the Applicant, but would be customized specifically for the Project, based on location, scope and hazards. The Project would comply with all Occupational Safety and Health Administration (OSHA) and California OSHA (CalOSHA) requirements in construction and operation. Illness and Injury Prevention Programs would also be developed and implemented for both construction and operation.

All subcontractors performing work onsite would be screened to review their safety performance. All contractors would be required to participate in safety orientation, to make them aware of all Project safety hazards and requirements and procedures. Daily tailgate safety meetings would be held to discuss site conditions, the planned daily tasks, and any potential hazards.

2.3.7.5 Wildlife

The Applicant would develop and implement a variety of management plans and procedures for protection and mitigation of impacts to wildlife. The plans are required under a variety of Federal and state environmental regulations, including the Federal Endangered Species Act (ESA), California Endangered Species Act (CESA), Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and both BLM and County requirements.

A Bird and Bat Conservation Strategy (BBCS) would be developed to describe measures to protect sensitive bird species. Unavoidable impacts to burrowing owls would be mitigated in consultation with CDFW, and in compliance with the latest CDFW and California Burrowing Owl Consortium guidelines. Due to potential for electrocution, collision, and nesting/perching by migratory birds on overhead power lines, the Applicant proposes to follow APLIC guidelines

specified in Suggested Practices for Avian Protection on Power Lines (APLIC 2006). Additional information that would be used in Project design is provided in Reducing Avian Collisions with Power Lines (APLIC 2012).

Additional plans to be developed include:

- Mojave Desert Tortoise Mitigation Plan;
- Raven Management Plan;
- Desert Kit Fox and Badger Management Plan; and
- VRMP, which would include components for habitat restoration and site revegetation.

Prior to construction, the requirements of all of the management plans and mitigation measures associated with wildlife protection would be incorporated into a Worker Environmental Awareness Program (WEAP). The Applicant has developed a preliminary summary of the WEAP, which would be completed and implemented prior to construction. This program would include training and communication mechanisms to educate all site workers regarding the requirements for general housekeeping, hazardous materials and waste handling, spill reporting and response, unanticipated discoveries of cultural resources, and measures to identify and protect biological resources. The WEAP measures applicable to biological resources would include flagging or staking of protected areas; instructions to not feed, kill, or harass wildlife; and requirements for reporting injured or dead animals.

The Applicant would adopt and implement the general mitigation measures for the Mojave desert tortoise, as set forth in the *Desert Tortoise Mitigation Measures* for the CDCA Plan as amended by the Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan and subsequent amendments. A Mojave desert tortoise mitigation plan and, if necessary, a translocation plan would be developed in consultation with BLM, USFWS, and CDFW. The measures are expected to include mitigation measures and habitat compensation ratios that are proportional to and consistent with the quality of habitat and management status associated with the Project area.

Prior to construction, a pre-construction clearance survey would be conducted to determine how many tortoises, if any, occupy the Project area. If any tortoises are located during the survey, the Applicant would consult with the USFWS to confirm the result, and in accordance with an approved Desert Tortoise Translocation Plan, present a plan for translocating tortoises to an off-site location (if more than five tortoises are discovered in the Project area) or relocating tortoises to a near-site location (if between one and five tortoises are discovered in the Project area). The Applicant would then initiate a clearance survey to capture tortoises for translocation/relocation, affix radio transmitters, and perform protocol health assessments to facilitate monitoring of their movements and health status following translocation/relocation. The translocation/relocation of tortoises from the Project area would be conducted in accordance with USFWS (2009, 2011, 2013) protocols.

2.3.7.6 Air Quality

Prior to issuance of the Notice to Proceed, the Applicant would prepare and implement a Phased Site Preparation Plan, which would include a finalized Dust Control and Soil Stabilization Plan. The Applicant has developed a preliminary summary of a Dust Control Plan to control fugitive

dust emissions during Project construction. The Dust Control Plan would be designed to minimize water use and dust emissions through optimal site preparation techniques. The Plan would take into consideration surface disturbance and construction schedule, seasonal winds, site specific wind patterns, soil properties, and soil disturbances to ensure adequate measures are implemented to manage fugitive dust. The construction schedule would minimize the size of open areas of disturbance requiring stabilization and maintain existing vegetation, where feasible. The Plan would:

- Identify a comprehensive construction schedule for the entire Project site. When feasible, surface disturbance would be minimized to those areas necessary for project access and installation of solar panels and other infrastructure associated with the solar facility.
- Identify all measures being undertaken during construction activities and operational activities to ensure fugitive dust being blown offsite is minimized. Measures may include, but are not limited to use of water trucks as required for the expected level of winds in the area, and use of dust suppressant (i.e., soil binders or mulch), as necessary.

The Plan would include requirements such as use of water or dust suppressants on dirt roads and graded areas, speed limits for vehicles, and covers for vehicles transporting soil. Dust control measures and BMPs would include limiting ground disturbance and vegetation removal to the extent practicable; using water on unpaved areas and stockpiles; stabilizing inactive surfaces and stockpiles with soil binders or dust palliatives; covering stockpiles at all times when not in use; using gravel at key locations on roads to prevent track-out; covering bulk material on trucks; maintain 15 mile per hour speed limits for vehicles on public and private earthen or gravel roads; and suspending grading activities during periods of high wind.

Impacts and mitigation associated with air quality are discussed in Section 4.2. In addition to addressing air quality, the Plan would assist in protecting workers and residents from exposure to soil-borne diseases such as valley fever. The potential for soil-borne diseases to be present in site soils is discussed in Section 3.9, and potential impacts and mitigation are discussed in Section 4.9.

2.3.7.7 Water Conservation

Water would be used during construction primarily for dust control and soil compaction, with small amounts used for sanitary and other purposes. Because Project water use is almost entirely associated with dust control during construction, the measures associated with the Phased Site Preparation Plan would also be used to conserve water where feasible. Although grading would be necessary in some parts of the site, the measures used to phase construction, control vehicle speed, cover stockpiles, minimize the amount of disturbed ground, and maintain existing vegetation, where feasible, would also result in minimizing water use. In addition, the use of soil stabilizers would minimize the need to use water to control dust in those areas.

Impacts and mitigation associated with water resources are discussed in Section 4.20.

2.3.7.8 Traffic

The Applicant has developed a Traffic Impact Analysis (provided in Appendix K) to evaluate and minimize impacts to traffic on local roads, as well as impacts to local residents and businesses. The Applicant proposes mitigation measures to reduce impacts associated with

Project-related traffic. These include limiting the number of commuting vehicles leaving the Project site between 4:00 and 6:00 PM to 650 vehicles, and developing and implementing a Traffic and Monitoring Control Plan.

Impacts and mitigation associated with traffic and transportation are discussed in Section 4.17.

2.3.7.9 Stormwater Management

A topographic map of the Project area is shown in Figure 2-7. The Project area consists of two distinct types of topography which affect site drainage. The northwestern portion of the Project area, comprising approximately half of the overall Project site, is part of an alluvial fan which slopes in a southeastward direction from the McCoy Mountains. The I-10 highway crosses this alluvial fan between the mountains and the Project site; the natural flow of the alluvial fan is interrupted, passes through concentrated channels underneath a highway bridge, and then becomes dispersed again on its route between I-10 and the Project site.

The southeastern portion of the site is a flat plateau, part of the Palo Verde Mesa. This area receives drainage from the alluvial fan to the northwest, but also from an alluvial fan system originating in the Mule Mountains to the southwest of the Project area. The ground surface in this area is characterized by a series of depressions in which surface water can pool. A drainage divide crosses from north to south through the eastern portion of the Project area. The depressions west of this divide drain surface water to the west and southwest, meeting the flow from the Mule Mountains and eventually draining off of the mesa to the southeast, towards the Colorado River. The depressions to the east of this divide drain directly to the east, towards the Colorado River. Although the drainage flows in the direction of the Colorado River, the drainages were determined by the USACE to be ephemeral, intrastate, isolated waters, and not under the jurisdiction of the USACE.

There are no Federal Emergency Management Agency (FEMA) designated flood zones within the vicinity of the Project. The Project site and general vicinity are classified by FEMA as Zone D – Not Studied.

The Applicant has developed a preliminary summary of a SWPPP, which would be developed and implemented prior to Project construction. The SWPPP would describe BMPs to be used for stormwater management and erosion control. The Applicant would use facility design, site preparation and stormwater control techniques to protect the facility from potential flood damage, avoid modifying upstream or downstream drainage flow rates, and avoid the potential for stormwater pollution through erosion. These techniques would be designed to encourage sheet flow across the Project site. Site preparation would be done by mowing or disk and roll method throughout most of the Project site. Where feasible, vegetation would be cut at ground level, leaving root systems in place. Cut and fill would be used in limited areas to fill depressions to stop water from pooling, and in limited areas where mounding occurs. Areas which would be occupied by structures, including the O&M Building, On-Site Substation, access roads, PCS and PVCS vault areas, temporary construction area, and anemometer towers, would be graded and compacted to meet engineering specifications. As shown in Table 2-4, these areas would comprise less than one percent of the overall Project area.

In addition to site preparation, the Applicant would use fiber rolls, filter fabric fence, and other erosion control methods at locations which may be subjected to erosion. Heavily used areas, such as the construction entrance, concrete wash-out area, and trackout pad areas would be

stabilized with gravel, filter fabric, and straw bales to minimize the quantity and duration of soil exposure, and to reduce the velocity of runoff.

The SWPPP would define the sequence of construction events; identify potential pollutants; identify potentially affected stream, wetlands, and locations of special-status species; describe BMPs and stormwater control measures; summarize applicable regulatory requirements; define inspection, monitoring, and maintenance requirements; define site restoration and revegetation requirements; and specify training and reporting requirements. The SWPPP would also address hazardous material storage, including precluding the storage of hazardous materials or the fueling of vehicles within 100 feet of any water body, well, or wetland.

Impacts and mitigation associated with stormwater flow are discussed in Section 4.20.

2.3.7.10 Visual Resources

The Applicant has developed a preliminary Lighting Management Plan to minimize visual impacts of the facility at night. Lighting would be shielded, focused downward and toward the interior of the facility, and would be limited to the O&M Building, the On-Site Substation, the temporary construction staging areas, and on or near each PCS station. The level and intensity of lighting would be designed to provide the minimum needed for security and safety reasons. Lighting may be controlled by hand-switches, or by motion sensors set to operate at human height. No lighting would be installed along the facility perimeter. The preliminary plan would be updated prior to construction, once final design of lighting systems is completed.

Impacts and mitigation associated with visual resources are discussed in Section 4.19.

2.3.7.11 Cultural Resources

Prior to the Notice to Proceed, the Applicant would develop a Cultural Resources Monitoring and Mitigation Plan (CRMMP), which would identify areas to be monitored during construction by a qualified archaeologist. The Plan would include an unanticipated discovery plan, which would describe procedures to be followed in the event that subsurface archaeological materials are encountered during construction. The CRMMP would include requirements for the education of construction workers regarding identification, reporting, and protection of cultural properties and suspected discoveries. The Plan would provide for curation of recovered archaeological materials with an accredited curation facility. All cultural resources to be curated from this Project will be curated in one single location.

Impacts and mitigation associated with cultural resources are discussed in Section 4.5.

2.3.7.12 Paleontological Resources

The Applicant would develop and implement a Paleontological Resources Monitoring and Mitigation Plan prior to construction. This Plan would identify areas to be monitored by a qualified paleontological professional during construction. The Plan would include worker awareness training to educate construction personnel regarding the identification, reporting, and protection of suspected fossil discoveries. The Plan would provide for curation of recovered fossils through an appropriate curation facility.

Impacts and mitigation associated with paleontological resources are discussed in Section 4.13.

2.3.7.13 Recreation

The Applicant has performed an assessment of the impact of the Project on designated open routes on the Project site (URS 2015; provided in Appendix L). Six open routes were identified within the Project footprint. Of these, three are associated with access to the 160 acre private land parcel. Because the Applicant would incorporate the private land parcel into the Project, the previous need for access to the parcel would no longer be applicable, and closure of these routes would not interfere with any access needs. The other three open routes are associated with access to the Mule Mountains to the southwest of the Project site. Although these would need to be closed to accommodate the Project, there are other existing open routes on the perimeter of the Project area which would continue to provide the same level of access.

Impacts and mitigation associated with recreation are discussed in Section 4.14.

2.4 Alternative 1: Proposed Action

The number and size of Project-related facilities associated with the Proposed Action is shown in Table 2-4, and the layout of the proposed facilities is shown in Figure 2-2. Table 2-4 also provides the land area that would be occupied the proposed facilities, expressed both as an acreage, and as a percentage of the total solar facility site land area.

The total Project area under application for BLM and County approval is approximately 5,275 acres (approximately 5,115 acres of BLM administered lands and 160 acres of private lands). Within this area, the Project would occupy approximately 3,770 acres (3,560 acres for the portion of the solar facility on BLM land, 154 acres for the portion of the solar facility on private land, 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land, and 54 acres for the gen-tie line corridor). The larger acreage under application allows for BLM and the County to consider various site layouts as Project alternatives for their environmental analysis.

As shown in Figure 2-2, the Project would include temporary construction areas located outside of the long-term Project area. A construction laydown area on the northern boundary of the Project, totaling 43 acres, would be enclosed by temporary fence during construction, would be removed and restored after the completion of construction, and would not be included within the 3,770 acre Project area. An additional 4.5 acres of temporary construction for an access road would be used. In addition, a total of 27.5 acres would be temporarily required for spur roads, laydown areas, and pulling areas for construction of the gen-tie line. Half of this acreage (approximately 14 acres) would be incorporated into the permanent gen-tie ROW, and the other half would not be included within the 3,770 acre Project area.

Including the temporary areas, the combined acreage of the BLM and County authorizations would total 3,831 acres, and the remaining area within the application boundary would not be incorporated as part of the Project.

Of the 3,714 acre solar array area, approximately 3,248 acres, or 87 percent of the site, would have site preparation performed by either mowing or the disk and roll method. Grading, in the form of cut and fill, would be performed on approximately 466 acres, or 13 percent of the site.

The output of the Proposed Action would be 450 MW. As conceived under this proposal, the Project would be PV-technology neutral, meaning it could accommodate any of a number of

different panel options, regardless of the efficiency and capacity of the panels. The specific type of solar panels to be used would be determined as part of final Project design. The Proposed Action assumes that commercial panels, available to any potential developer, would be used, but the total output would be limited to 450 MW.

The majority of the Project site would be occupied by the solar arrays and power conversion equipment. The total amount of ground disturbance for the Project site would be 3,831 acres. Less than one percent of the total Project area would be covered with at-grade facilities (e.g., O&M Building, On-Site Substation, PCSs, and PVCSs). Approximately 75 percent of the solar facility site would be covered or shaded by solar modules.

Table 2-4. Proposed Action Components and Approximate Land Areas

Project-Related Facility	Size or Number of Components	Approximate Land Area on BLM (acres)	Approximate Land Area on Private Land (acres)	Total Land Area (acres)[1]	Percentage of Total Project Site[1]
Area Included within BLM and County Applications					
BLM ROW Application Area	NA	5,115	NA	5,115	NA
Private Lands under County Jurisdiction	NA	NA	160	160	NA
Total Application Area	**NA**	**5,115**	**160**	**5,275**	**NA**
Facilities Within Perimeter Fence and Post-Construction ROW					
PV Arrays[2]	314 arrays; 7.4 million individual modules; 506,356 piles	2,652	125	2,777	74.8%
At-Grade Items (On-Site Substation, O&M Building, PCSs, and PVCSs)	1 On-Site Substation, 1 O&M Building, 314 PCSs, 16 PVCSs	8.4	0.1	8.5	0.2%
Internal Access Roads	112.9 miles	396	14	410	11.1%
Construction Staging Areas[3]	2	28	0	28	0.8%
Communication and Power Lines (inside fence)	1.4 miles long by 20 feet wide	3.4	0	3.4	0.1%
Undeveloped Area	NA	472	15	487	13.0%
Sub-total Area Enclosed by Perimeter Fencing[4]	**17.4 miles of security fence**	**3,560**	**154**	**3,714**	**100%**

Table 2-4. Proposed Action Components and Approximate Land Areas

Project-Related Facility	Size or Number of Components	Approximate Land Area on BLM (acres)	Approximate Land Area on Private Land (acres)	Total Land Area (acres)[1]	Percentage of Total Project Site[1]
Facilities Outside Perimeter Fence and Post-Construction ROW					
Gen-Tie Line Corridor	2.79 miles long by 160 feet wide	54	0	54	NA
Communication and Power Lines (outside fence)	1 mile long by 20 feet wide	2	0	2	NA
Total Permanent Project Area[1]	**NA**	**3,616**	**154**	**3,770**	**NA**
Facilities Outside Perimeter Fence, Temporary ROW for Construction					
Temporary Construction Staging Areas[5]	2	43	0	43	NA
External Access Road[6]	1.2 miles	4.5	0	4.5	NA
Temporary Disturbance Areas associated with Gen-Tie Structure Sites, Spur Roads, Pulling Sites, and Laydown Area	NA	13.8	0	13.8	NA
Total Temporary Project Area	**NA**	**61**	**0**	**61**	**NA**
Total Project Area[1]	**NA**	**3,677**	**154**	**3,831**	**NA**

1 - Values may not add to 100% due to rounding to nearest whole number.
2 - Acreage based on horizontal tracker design, which represents worst-case disturbance compared to fixed-tilt designs.
3 - Includes two construction staging areas. These areas will not be covered with solar panels and are considered undeveloped area from a long term perspective.
4 – Even though the term of the ROW would be 30 years, all disturbance within the perimeter fence is considered to be permanent disturbance, for the purpose of impact analysis.
5 - Includes two temporary construction staging areas, construction offices and parking and temporary water storage. This area will be enclosed by temporary perimeter fencing.
6 – Exact location to be determined based on final design, and approved by BLM in the Final POD. Length and acreage are maximum, not to be exceeded.

2.5 Alternative 2: Resource Avoidance Alternative

The number and size of Project-related facilities associated with Alternative 2, the Resource Avoidance Alternative, is shown in Table 2-5, and the layout of the proposed facilities is shown in Figure 2-9. Table 2-5 also provides the land area that would be occupied by the facilities, expressed both as an acreage, and as a percentage of the total Project land area.

The Resource Avoidance Alternative was developed to specifically reduce impacts to cultural and biological resources, as well as drainages and watercourses. In general, the alternative would avoid the drainages and sand dunes in the northwestern portion of the Project area, as well

as resources in the southwestern portion of the Project area. This alternative further provides a buffer between the project and avoided resources in most instances. To accommodate the re-location of the northern Project boundary and to avoid resources, the locations of the O&M Building, On-Site Substation, and temporary construction areas in the Proposed Action would be moved from the northwestern Project boundary to the northeastern Project boundary. This would result in moving the On-Site Substation a further distance from the CRSS, and thus require an increase in the length of the gen-tie line from 2.79 to 3.89 miles.

The Resource Avoidance Alternative would be based on the use of thin-film technology with CdTe as the semiconductor material, or other high efficiency technology. Because of advancements in technology and efficiency of solar panels, the Resource Avoidance Alternative would generate the same power output as the Proposed Action, but would do so on a reduced Project footprint that has been designed to avoid specific biological, cultural, and other resource impacts.

The output of the Resource Avoidance Alternative would be 450 MW, the same as the Proposed Action. As with the Proposed Action, the majority of the Project site would be occupied by the solar arrays and power conversion equipment. The total amount of ground disturbance would be 2,845 acres. Less than one percent of the total Project area would be covered with at-grade facilities (e.g., O&M Building, On-Site Substation, PCSs, and PVCSs). Approximately 72 percent of the total Project area would be covered or shaded by solar modules.

Of the 2,698 acre solar array area included in Alternative 2, approximately 2,403 acres, or 89 percent of the site, would have site preparation performed by either mowing or the disk and roll method. Grading, in the form of cut and fill, would be performed on approximately 295 acres, or 11 percent of the site.

Table 2-5. Alternative 2 Components and Approximate Land Areas

Project-Related Facility	Size or Number of Components	Approximate Land Area on BLM (acres)	Approximate Land Area on Private Land (acres)	Total Land Area (acres)[1]	Percentage of Total Project Site[1]
Area Included within BLM and County Applications					
BLM ROW Application Area	NA	5,115	NA	5,115	NA
Private Lands under County Jurisdiction	NA	NA	160	160	NA
Total Application Area	**NA**	**5,115**	**160**	**5,275**	**NA**
Facilities Within Perimeter Fence and Post-Construction ROW					
PV Arrays[2]	139 arrays; 1.08 million individual modules; 390,312 piles	1,805	141	1,946	72.13%

Table 2-5. Alternative 2 Components and Approximate Land Areas

Project-Related Facility	Size or Number of Components	Approximate Land Area on BLM (acres)	Approximate Land Area on Private Land (acres)	Total Land Area (acres)[1]	Percentage of Total Project Site[1]
At-Grade Items (On-Site Substation, O&M Building, PCSs, and PVCSs)	1 Substation, 1 O&M Building, 132 PCSs, 10 PVCSs	5.6	0.1	5.7	0.21%
Internal Access Roads	30 miles	69	4	73	2.71%
Construction Staging Areas[3]	0	0	0	0	0%
Communication and Power Lines (inside fence)	0.3 miles long by 20 feet wide	1	0	1	<0.1%
Undeveloped Area	NA	657	15	672	24.92%
Sub-total Area Enclosed by Perimeter Fencing[4]	**17.8 miles of security fence**	**2,538**	**160**	**2,698**	**100%**
Facilities Outside Perimeter Fence and Post-Construction ROW					
Gen-Tie Line Corridor	4.18 miles long by 160 feet wide	81	0	81	NA
Communication and Power Lines (outside fence)	1.2 mile long by 20 feet wide	2.8	0	2.8	NA
Total Permanent Project Area[1]	**NA**	**2,622**	**160**	**2,782**	**NA**
Facilities Outside Perimeter Fence, Temporary ROW for Construction					
Temporary Construction Staging Areas[5]	2	37	0	37	NA
External Access Road[6]	14,499 feet	7.2	0	7.2	NA
Temporary Disturbance Areas associated with Gen-Tie Structure Sites, Spur Roads, Pulling Sites, and Laydown Area	NA	19.4	0	19.4	NA
Total Temporary Project Area	**NA**	**63.6**	**0**	**63.6**	**NA**
Total Project Area[1]	**NA**	**2,685**	**160**	**2,845**	**NA**

Table 2-5. Alternative 2 Components and Approximate Land Areas

Project-Related Facility	Size or Number of Components	Approximate Land Area on BLM (acres)	Approximate Land Area on Private Land (acres)	Total Land Area (acres)[1]	Percentage of Total Project Site[1]

1 - Values may not add to 100% due to rounding to nearest whole number.
2 - Acreage based on horizontal tracker design, which represents worst-case disturbance compared to fixed-tilt designs.
3 – Staging areas inside perimeter fence would be covered with solar panels, so are included in PV array acreage.
4 - Even though the term of the ROW would be 30 years, all disturbance within the perimeter fence is considered to be permanent disturbance, for the purpose of impact analysis.
5 - Includes two temporary construction staging areas, construction offices and parking and temporary water storage. This area will be enclosed by temporary perimeter fencing.
6 – Varies from 20 to 30 feet wide. Exact location to be determined based on final design, and approved by BLM in the Final POD. Length and acreage are maximum, not to be exceeded.

2.6 Alternative 3: Reduced Project Alternative

The number and size of Project-related facilities associated with Alternative 3, the Reduced Project Alternative, is shown in Table 2-6, and the layout of the proposed facilities is shown in Figure 2-10. Table 2-6 also provides the land area that would be occupied by the facilities, expressed both as an acreage, and as a percentage of the total Project land area.

The Reduced Project Alternative further reduces the acreage of the solar arrays, with elimination of the proposed solar arrays primarily in the northern portion of the area to maintain habitat for the Mojave fringe-toed lizard and Harwood's eriastrum, a BLM Sensitive Species plant. The locations of the O&M Building and On-Site Substation would be situated approximately 0.29 miles further south than in Alternative 2, resulting in a slightly longer gen-tie line that would be 4.18 miles long (1.39 miles longer compared to the Proposed Action.

The output of the Reduced Project Alternative would be 285 MW. The Reduced Project Alternative would use CdTe PV panels or other high efficiency technology. The majority of the Project site would be occupied by the solar arrays and power conversion equipment. The total amount of ground disturbance would be 2,112 acres. Less than one percent of the total Project area would be covered with at-grade facilities (e.g., O&M Building, On-Site Substation, PCSs, and PVCSs). Approximately 76 percent of the total Project area would be covered or shaded by solar modules.

Of the 1,963 acre solar array area included in Alternative 3, approximately 1,703 acres, or 87 percent of the site, would have site preparation performed by either mowing or the disk and roll method. Grading, in the form of cut and fill, would be performed on approximately 260 acres, or 13 percent of the site.

Table 2-6. Alternative 3 Components and Approximate Land Areas

Project-Related Facility	Size or Number of Components	Approximate Land Area on BLM (acres)	Approximate Land Area on Private Land (acres)	Total Land Area (acres)[1]	Percentage of Total Project Site[1]
Area Included within BLM and County Applications					
BLM ROW Application Area	NA	5,115	NA	5,115	NA
Private Lands under County Jurisdiction	NA	NA	160	160	NA
Total Application Area	**NA**	**5,115**	**160**	**5,275**	**NA**
Facilities Within Perimeter Fence and Post-Construction ROW					
PV Arrays[2]	107 arrays; 832,032 individual modules; 300,456 piles	1,352	141	1,493	76.49%
At-Grade Items (On-Site Substation, O&M Building, PCSs, and PVCSs)	1 On-Site Substation, 1 O&M Building, 104 PCSs, 9 PVCSs	5.6	0.1	5.7	0.29%
Internal Access Roads	20 miles	44	4	48	2.46%
Construction Staging Areas[3]	0	0	0	0	0%
Communication and Power Lines (inside fence)	0.3 miles long by 20 feet wide	1	0	1	<0.1%
Undeveloped Area	NA	400	15	415	21.26%
Sub-total Area Enclosed by Perimeter Fencing[4]	**13.2 miles of security fence**	**1,803**	**160**	**1,963**	**100%**
Facilities Outside Perimeter Fence and Post-Construction ROW					
Gen-Tie Line Corridor	4.18 miles long by 160 feet wide	81	0	81	NA
Communication and Power Lines (outside fence)	1.2 mile long by 20 feet wide	2.8	0	2.8	NA
Total Permanent Project Area[1]	**NA**	**1,887**	**160**	**2,047**	**NA**
Facilities Outside Perimeter Fence, Temporary ROW for Construction					
Temporary Construction Staging Areas[5]	2	37	0	37	NA

Table 2-6. Alternative 3 Components and Approximate Land Areas

Project-Related Facility	Size or Number of Components	Approximate Land Area on BLM (acres)	Approximate Land Area on Private Land (acres)	Total Land Area (acres)[1]	Percentage of Total Project Site[1]
External Access Road[6]	16,973 feet	8.36	0	8.36	NA
Temporary Disturbance Areas associated with Gen-Tie Structure Sites, Spur Roads, Pulling Sites, and Laydown Area	NA	19.4	0	19.4	NA
Total Temporary Project Area	**NA**	**65**	**0**	**65**	**NA**
Total Project Area[1]	**NA**	**1,952**	**160**	**2,112**	**NA**

1 - Values may not add to 100% due to rounding to nearest whole number.
2 - Acreage based on horizontal tracker design, which represents worst-case disturbance compared to fixed-tilt designs.
3 - Staging areas inside perimeter fence would be covered with solar panels, so are included in PV array acreage.
4 - Even though the term of the ROW would be 30 years, all disturbance within the perimeter fence is considered to be permanent disturbance, for the purpose of impact analysis.
5 - Includes two temporary construction staging areas, construction offices and parking and temporary water storage. This area will be enclosed by temporary perimeter fencing.
6 –Varies from 20 to 30 feet wide. Exact location to be determined based on final design, and approved by BLM in the Final POD. Length and acreage are maximum, not to be exceeded.

2.7 Alternative 4: No Action Alternative

Under the No Action Alternative, the BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, no new structures or facilities would be constructed, operated and maintained, or decommissioned on the site, and no related ground disturbance or other Project-specific impacts would occur at this time.

The Western Solar Plan ROD designated the Riverside East SEZ (including the DQSP application area) as a priority area for commercial-scale solar development. In addition, the area has been designated as a DFA in the DRECP. Accordingly, a different commercial-scale solar development may be proposed within the ROW application area even if the DQSP ROW application were denied. Because the Project area has been designated as a DFA in the DRECP, it would be subject to development under those parameters.

2.8 Preferred Alternative/Environmentally Superior Alternative

Under NEPA, the "preferred alternative" is a preliminary indication of the Lead Agency's preference of action among the Proposed Action and alternatives. A NEPA Lead Agency may select a preferred alternative for a variety of reasons, including the agency's priorities, in addition to the environmental considerations discussed in the EIS.

A comparison of the potential environmental impacts associated with the four Project Alternatives (No Project/No Action Alternative and three action Alternatives) are summarized in

Table ES-1. The impacts, mitigation measures, and residual impacts after mitigation of the proposed Project and alternatives are detailed in Chapter 4 of this Draft PA/EIS/EIR.

The BLM (NEPA Federal Agency) has identified Alternative 2: Resource Avoidance alternative as the Agency Preferred Alternative. This identification is based on BLM planning regulations (BLM Manual 1790-1, Ch V(B)(4)(c)). The BLM will re-evaluate the preferred alternative following analysis of public comments on the Draft PA/EIS/EIR.

CEQA requires analysis of a reasonable range of alternatives to the proposed Project to foster informed decision making and public participation (14 CCR § 15126.6(a)) and the identification of an environmentally superior alternative. If the environmentally superior alternative is the "no project" alternative, the EIR must also identify an environmentally superior alternative among the other alternatives (state CEQA Guidelines § 15126.6(e)).

The magnitude of impacts, including acreages, numbers of impacted receptors, and amounts of emissions are discussed in Table ES-1, and a summary of the significance of impacts under CEQA is provided in Table ES-2. After comparing and weighing the benefits and impacts of all of the feasible alternatives, the County (CEQA Lead Agency) has identified Alternative 4, the No Action Alternative, as the environmentally superior alternative, subject to public review.

Because the No Action Alternative would not accomplish the County's or Applicant's objectives, the County has reviewed the impacts associated with the three action alternatives, Table ES-1 shows that Alternative 3 involves the least amount of total ground disturbance. However, this reduction in total acreage results in a project that would produce 285 MW, which falls short of the County's and Applicant's objective of generating 450 MW. At the same time, the impacts of Alternative 3 to the *Pleuraphis rigida* vegetation alliance, state jurisdictional waters, occupied habitat for the Harwoods eriastrum, occupied habitat for the Mojave fringe-toed lizard, CRHR-eligible cultural resources, and groundwater use would be the same as Alternative 2, which does meet the objective of generating 450 MW. As a result, the County has identified Alternative 2 as the environmentally superior alternative among the action alternatives, pending analysis of public comments on the Draft PA/EIS/EIR.

2.9 Alternatives Considered but Eliminated from Detailed Analysis

2.9.1 Rationale for Eliminating Alternatives

In accordance with 43 CFR 2804.10, the BLM worked closely with the Applicant during the pre-application phase to identify appropriate areas to site the Project. The BLM discouraged the Applicant from including in its application alternate BLM locations with significant environmental concerns, such as critical habitat, Areas of Critical Environmental Concern (ACECs), Desert Wildlife Management Areas (DWMAs, now designated as Desert Tortoise ACECs), designated off-highway vehicle (OHV) areas, wilderness study areas, and designated wilderness areas. The BLM encouraged the Applicant to locate its Project on public land with the fewest potential conflicts.

Other alternative sites, technologies and methods discussed below were considered by the BLM but eliminated from detailed analysis under NEPA. These alternatives were eliminated from detailed analysis based on one or more of the following reasons:

1. It is ineffective (it would not respond to the BLM's purpose and need)

2. It is technically or economically infeasible
3. It is inconsistent with the basic policy objectives for the management of the area (such as, not in conformance with the land use plan (i.e., the CDCA Plan)
4. Its implementation is remote or speculative
5. It is substantially similar in design to an alternative that is analyzed
6. It would have substantially similar effects to an alternative that is analyzed

Consistent with the sixth reason to eliminate a potential alternative from detailed analysis, the BLM and County also considered whether a proposed alternative would avoid or reduce to a level of insignificance effects to human or environmental resources associated with the Proposed Action, or, conversely, create significant effects potentially greater than those of the Proposed Action.

State CEQA Guidelines (Section 15126.6) state the following:

(a) An EIR [Environmental Impact Report] shall describe a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

(b) The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

(c) The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

(d) The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.

(e) The EIR shall include the evaluation of the "No project" alternative.

(f) The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

This process for eliminating alternatives from detailed analysis complies with 40 CFR 1502.14(a), BLM IM 2011-059, PA Handbook Section 6.6.3, and state CEQA Guidelines Section 15126.6. It is described briefly in the following sections.

2.9.2 Alternatives Considered but Eliminated from Detailed Analysis

Alternatives considered included alternative sites, alternative construction methods, alternative designs and layouts, and alternative technologies for generating or delivering power.

2.9.2.1 Site Alternatives

Potential alternative sites to the DQSP site include sites entirely on private land, different locations on BLM-managed public lands, brownfield sites identified by the U.S. Environmental Protection Agency (EPA), and distributed generation alternatives.

In deciding where to propose the development of new solar facilities, the Applicant considered multiple options, including sites on private land and on other BLM-administered lands. The Applicant's consideration of alternative locations for large-scale solar facilities was restricted by several criteria, including:

- Availability of a contiguous area of land large enough to accommodate the proposed Project;
- Technical constraints, including insolation, slope, and hydrology;
- Environmental impacts, based on the presence of potentially impacted resources and associated management and resource protection constraints; and
- Costs associated with site accessibility, and proximity to existing high voltage transmission facilities with sufficient available capacity and viable access to energy markets, including suitable interconnection and priority queue position.

In evaluating potential sites, the Applicant also reviewed the Transmission Ranking Cost Report filed by SCE with the California Public Utilities Commission (CPUC) to identify feasible interconnection locations. In this review, the Applicant identified the CRSS as one of the most viable interconnection points for new renewable projects, and thus considered site locations which met the factors presented above.

Private Land Alternative

Private lands within Riverside County were considered by the Applicant for development of the proposed solar PV energy facility. The Applicant's siting process identified the area along the I-10 corridor, in close proximity to the CRSS, as an area where sites that meet the criteria discussed above are found. In general, the land ownership in this area does not include large, available or obtainable parcels of private property, or multiple private parcels in close proximity to one another, that are sufficiently close to transmission. The area does have large areas of privately-owned agricultural land in and around the city of Blythe. However, much of this land is currently under cultivation, has sufficient water sources to grow crops, and is part of an interdependent hydrologic system managed through agreements with the Metropolitan Water District of Southern California. In addition, many of these parcels are encumbered by Williamson Act contracts, and purchasing and converting such land, including prime farmlands, to nonagricultural uses would significantly increase the time, effort and cost of obtaining control of these parcels for solar development. These lands are also located in closer proximity to, and in the floodplain of, the Colorado River, potentially increasing environmental impacts and flood risks as compared to sites, such as the DQSP site, located at a higher elevation.

In considering solar development in close proximity to the CRSS, the Applicant engaged local real estate experts to determine the feasibility of acquiring enough private land for the Project. Compiling enough contiguous small land parcels necessary to develop a commercial-scale solar facility is difficult. The Applicant evaluated private land holdings in the Palo Verde area, Coachella Valley, north of Blythe, and near the Salton Sea. Private land in the Palo Verde and Coachella Valley areas is highly parcelized, and the Palo Verde area is complicated by the presence of significant drainages, an adjacent wilderness area, and close proximity to the Colorado River to the east. Abandoned agricultural lands and other private land north of Blythe are less parcelized, but also require substantially longer gen-tie transmission lines to connect to the CRSS, increasing resource impacts and costs. Larger parcel options near the Salton Sea do not have viable transmission options. In evaluating potential sites, the Applicant determined that it was not feasible to compile the privately-owned acreage necessary to accommodate the proposed Project and have available interconnection access to the CRSS.

The challenges in compiling private land parcels have been documented in environmental analysis documents for other nearby solar facilities. For example, for the EIS for the McCoy Solar Energy Project (MSEP), located just north of the DQSP on the other side of I-10, the Applicant for that project evaluated more than 195,000 acres of private land within 20 miles of the CRSS, and determined that only 68 individual parcels, comprising about 4,700 acres, were available for sale or lease. The largest contiguous block was 858 acres, which consisted of 7 different parcels owned by four different landowners.

Because insufficient private land was available to meet the basic needs of the Project, an all-private land alternative was not carried forward for detailed consideration.

Alternative BLM-Administered Land

In general, BLM-administered land satisfies the need to provide contiguous parcels of land of sufficient size, and in close proximity to transmission infrastructure, better than does a private land alternative. However, BLM land is also constrained by technical factors and resource protections which limit the number and size of sites that can be considered for solar development. Much of the BLM-administered land in the California desert is precluded from development by special designations such as wilderness areas and ACECs, and many potentially suitable areas outside these designated areas are precluded because they are in use. The changes to land use allocations under the DRECP further restrict the availability of BLM-administered land on which solar development can occur.

The Applicant has submitted ROW applications for numerous other potential sites in eastern Riverside County in the past, including Desert Opal (CACA-48818), Desert Jasper (CACA-49357), Desert Onyx (CACA-4894), Desert Amber (CACA-49361), Desert Ruby (CACA-48819), Desert Sapphire (CACA-48820), Desert Garnet (CACA-49017), Desert Obsidian (CACA-49511) and Desert Turquoise (CACA-49613). The Applicant's predecessor, Nextlight Renewable Power, filed an application for a 4,120 acre site between the Coxcomb Mountains and the Palen Dry Lake that was specifically intended to be an alternative to the DQSP Project site in 2010 (CACA-051954, the "Golden State Solar Project"). These applications have all been withdrawn, for various reasons related to resource impact concerns and/or lack of necessary transmission developments and upgrades.

More importantly, BLM has already determined that the DQSP site is suitable for solar development, in both the Western Solar Plan and the DRECP. The Western Solar Plan identified specific locations that, at a plan level, appear well-suited for utility-scale production of solar energy where the BLM would prioritize development (i.e., solar energy zones or SEZs) as well as categories of lands to be excluded from such development. The area of the DQSP was designated as the Riverside East SEZ, signifying that the DQSP site and the surrounding area are preferred for large-scale solar energy development based on environmental and technical suitability for such development.

Although both the Western Solar Plan and the DRECP include a process for proposing renewable energy projects on "variance lands" outside of designated SEZs and DFAs, the objective of these landscape-level planning efforts was to promote development in certain designated areas. Through the Western Solar Plan, BLM already considered whether other locations on public lands might be suitable for solar development and, after years of review, determined that the Riverside East SEZ, encompassing the proposed DQSP, contained the areas most suitable for solar development. Similarly, the DRECP considered technical suitability and resource impacts in implementing new land use allocations for resource protection, and for the focus of renewable energy development. Although the DQSP application is exempt from the land use decisions made in the DRECP because it is a pending application, the DRECP recognized the area of the DQSP site as suitable for solar development by designating it as a DFA.

As a result of the technical, procedural, and environmental constraints discussed above, timely development of the Project on other lands administered by BLM would not be feasible, and is likely to be inconsistent with the basic policy objectives for management of areas outside of the proposed DFAs.

Brownfield Sites

The USEPA tracks 480,000 contaminated sites for potential reuse for renewable energy development as part of its RE-Powering America's Lands Initiative. Of these sites, USEPA has identified 5,000 sites nationwide as potentially suitable for PV development. Using the USEPA's Renewable Energy Interactive Mapping Tool, which is a Google Earth KMZ file, it is possible to view information about potential utility scale PV solar energy sites on contaminated lands. In addition to the contaminated site's location, the tool also provides the site name and identification information, a link to the site's cleanup status information, and specific acreage and renewable energy resource information. For example, the tool indicates which potential sites are (and which are not) within a designated Renewable Energy Zone (REZ). REZs have been established by the BLM in coordination with the Western Governors Association, the Department of Energy, and the States of Colorado and California and take into consideration both resource potential and exclusion zones.

Using the tool to select USEPA tracked sites (i.e., abandoned mined lands, brownfields, RCRA sites, Federal and non-Federal Superfund sites, and landfills) as well as state-tracked sites, BLM identified four locations with excellent utility solar power potential along the I-10 corridor between Riverside and the Arizona border. These sites ranged in size from 75 to 160 acres, and are therefore not of a scale necessary to generate 450 MW of solar power.

The Applicant also reviewed a Google Earth Map and data set developed by USEPA and the National Renewable Energy Laboratory (NREL) that illustrates approximately 11,000 contaminated and degraded public and private sites in California that could be candidates for renewable energy development (USEPA 2016). This tool includes additional California sites and uses a screening tool to filter and suggest sites as the best for utility-scale renewable energy development based on the various renewable energy technologies and associated screening criteria.

Of the approximately 11,000 sites, only one potential utility-scale PV solar site was identified within nearly 50 miles of the proposed site: Wiley Wells Water Point, which is a former military training area located south of I-10 and 12 miles west of Ripley. This site is located seven miles from the grid connection at the CRSS, and approximately seven miles from an access road. In addition, the site has had very little historic use, so is undeveloped. In contrast, the DQSP site is located approximately 1.5 miles from the CRSS, is adjacent to a designated utility corridor, and is bordered by county roads that can provide site access. Although the BLM portion of the site is undeveloped, the site is bordered by high voltage transmission lines on all sides, and there is an existing solar generation facility bordering the site to the north. Based on its proximity to transmission and access road infrastructure, the DQSP is expected to be more favorable, and have fewer environmental impacts, than the Wiley Wells site, so the Wiley Wells site was eliminated from further consideration.

2.9.2.2 Alternative Construction Methods

The Applicant considered using construction methods that would reduce or eliminate the amount of grading and vegetation removal that would occur during site preparation. In general, some level of both grading and vegetation removal is needed due to safety and constructability issues.

With respect to safety, removal of vegetation and leveling of the ground surface is necessary because materials, including the panels and the modular supports, are moved about the site and stored in stacks. The materials are brought in by truck, but then must be moved to their installation location by forklifts, and set on the ground on pallets and on folding tables. Moving stacks of materials by forklift, or storing them on pallets in stacks, on uneven ground presents a very high risk of toppling of the stacks. This process would not only damage the materials, but would be a substantial safety hazard for workers in the vicinity. In addition, the panel installation process occurs by workers on foot. This includes workers on foot moving as spotters for the forklifts and cranes (often moving backwards), and also workers on foot attaching panels to the modular supports with clamps. Performing these tasks on uneven ground, and with vegetation present, would present a substantial tripping hazard.

In addition to safety issues, the installation of PV panels requires very limited vertical and horizontal tolerances. Each row of panels is attached to a series of 28 support posts, and the support posts must be perfectly straight, and aligned to within 0.5 inches vertical height. Installing the posts within this tolerance using post drivers sitting on uneven surfaces is not feasible.

Through the application and environmental review process, BLM worked with the Applicant to ensure that site grading and vegetation removal would be minimized to the extent necessary for safety and constructability. Although the agency agrees that vegetation impacts would be reduced by mowing as opposed to grading, leaving original topography and vegetation onsite

would increase construction safety hazards and render panel installation infeasible. Therefore, an alternative which would maintain all on-site drainages and vegetation was eliminated as being infeasible.

2.9.2.3 Migratory Bird and Special Status Species Protection Alternative

During scoping, the USFWS requested that an alternative designed to minimize impacts to migratory birds, as well as other special status species, be considered. As shown in Table 2-7, some of the features of these suggestions are already incorporated into either the Proposed Action or into the Resource Avoidance or Reduced Project Alternatives. Other suggested features are not technically or economically feasible. As a result, a specific Migratory Bird and Special Status Species Protection Alternative was not developed, but the features which are feasible are encompassed within the existing alternatives.

Table 2-7. Potential Actions to be Incorporated for Protection of Migratory Birds and Other Special Status Species

Recommended Project Feature	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative
Reduce project footprint to the extent possible to minimize attractive illusion of a large water body.	The Project footprint is minimized, for the technology proposed, by using optimal (tightest) spacing of solar array.	Proposed use of different technology (CdTe panels) allows Project footprint to be reduced further, while maintaining the same output.	Project footprint reduced further, by reducing proposed output from 450 to 285 MW.
Instead of long continuous rows, use irregular spacing for solar arrays to break up the illusion of a large water body. Fill in spaces if monitoring demonstrates no difference in mortalities.	Irregular spacing within arrays reduces power output, results in an increase in the Project footprint, and is not economically feasible.	Irregular spacing within arrays reduces power output, results in an increase in the Project footprint, and is not economically feasible. Irregular overall outline of this alternative may contribute to breaking up the illusion of a large water body.	Irregular spacing within arrays reduces power output, results in an increase in the Project footprint, and is not economically feasible. Irregular overall outline of this alternative may contribute to breaking up the illusion of a large water body.
No construction ponds.	Water storage is required to ensure adequate water availability for dust control during construction. Temporary ponds or tanks are proposed during construction. No ponds would be used for operations.	Water storage is required to ensure adequate water availability for dust control during construction. Temporary ponds or tanks are proposed during construction. No ponds would be used for operations.	Water storage is required to ensure adequate water availability for dust control during construction. Temporary ponds or tanks are proposed during construction. No ponds would be used for operations.
Undergrounding or monopoles for gen-ties and distribution lines.	Gen-tie line would use tubular steel monopoles, but collection lines within solar arrays may use H-frame construction.	Gen-tie line would use tubular steel monopoles, but collection lines within solar arrays may use H-frame construction.	Gen-tie line would use tubular steel monopoles, but collection lines within solar arrays may use H-frame construction.

Table 2-7. Potential Actions to be Incorporated for Protection of Migratory Birds and Other Special Status Species

Recommended Project Feature	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative
Use dual-axis tracking panels so that panels may be tilted vertically at night, to break up any illusion of a large water body.	There are no commercial applications of this technology to utility-scale PV power plants. Dual axis trackers use up to twice the land area of single-axis trackers (Sunpower 2016).	There are no commercial applications of this technology to utility-scale PV power plants. Dual axis trackers use up to twice the land area of single-axis trackers (Sunpower 2016).	There are no commercial applications of this technology to utility-scale PV power plants. Dual axis trackers use up to twice the land area of single-axis trackers (Sunpower 2016).
Test deterrent systems such as lights and noise.	No deterrent systems are proposed.	No deterrent systems are proposed.	No deterrent systems are proposed.
Leave a gap in bottom of the fence to evaluate wildlife use of the site after construction.	Tortoise fencing requirements preclude leaving a gap.	Tortoise fencing requirements preclude leaving a gap.	Tortoise fencing requirements preclude leaving a gap.
Utilize some sort of fence marking to reduce avian collisions with newly constructed fences.	No markings are proposed.	No markings are proposed.	No markings are proposed.
Avoid the sand transport corridor to the extent possible, in particular those areas mapped as active/stabilized dunes that support the species as identified in the Project-specific surveys.	Proposed Action would disturb portions of the sand transport corridor, mostly by placement of solar arrays.	The alternative is designed, in part, to reduce direct impacts to sand dunes. Most disturbance would be temporary disturbance associated with gen-tie construction.	The alternative is designed, in part, to reduce direct impacts to the sand dunes. Most disturbance would be temporary disturbance associated with gen-tie construction.
Avoid using lattice-type structures or placing external ladders and platforms on any infrastructure to minimize perching and nesting.	Gen-tie line would use tubular steel monopoles, but collection lines within solar arrays may use H-frame construction. No lattice structures are proposed.	Gen-tie line would use tubular steel monopoles, but collection lines within solar arrays may use H-frame construction. No lattice structures are proposed.	Gen-tie line would use tubular steel monopoles, but collection lines within solar arrays may use H-frame construction. No lattice structures are proposed.
Avoid use of guy wires on meteorological towers.	The meteorological stations would not use guy wires.	The meteorological stations would not use guy wires.	The meteorological stations would not use guy wires.
Use minimal lighting. Where lighting is necessary, facility lighting should be focused downward to reduce sky illumination	Section 2.3.7.10 discusses the components of the Lighting Management Plan, which would include minimizing lighting and focusing lighting downward.	Section 2.3.7.10 discusses the components of the Lighting Management Plan, which would include minimizing lighting and focusing lighting downward.	Section 2.3.7.10 discusses the components of the Lighting Management Plan, which would include minimizing lighting and focusing lighting downward.
Build power lines in accordance with guidelines from the Avian Power Line Interaction Committee.	Conformance with APLIC is discussed in Section 2.3.7.5, and is a requirement of Mitigation Measure VEG-8.5.	Conformance with APLIC is discussed in Section 2.3.7.5, and is a requirement of Mitigation Measure VEG-8.5.	Conformance with APLIC is discussed in Section 2.3.7.5, and is a requirement of Mitigation Measure VEG-8.5.

Table 2-7. Potential Actions to be Incorporated for Protection of Migratory Birds and Other Special Status Species

Recommended Project Feature	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative
Minimize permanent disturbance area by minimizing creation of roads, avoidance of excessive clearing of vegetation, and avoidance of grading whenever possible.	Site preparation methods are discussed in Section 2.3.4.3. Site preparation would use mowing or disk contour grade and roll methods and compaction of vegetation, in order to leave topsoil and vegetative matter in place, to the extent feasible.	Site preparation methods are discussed in Section 2.3.4.3. Site preparation would use mowing or disk contour grade and roll methods and compaction of vegetation, in order to leave topsoil and vegetative matter in place, to the extent feasible.	Site preparation methods are discussed in Section 2.3.4.3. Site preparation would use mowing or disk contour grade and roll methods and compaction of vegetation, in order to leave topsoil and vegetative matter in place, to the extent feasible.
Clear vegetation outside the bird breeding season pursuant to a Nest Bird Plan; any variances should be approved by the agencies.	Mitigation Measure WIL-7 requires pre-construction surveys and nest avoidance if construction takes place during breeding season.	Mitigation Measure WIL-7 requires pre-construction surveys and nest avoidance if construction takes place during breeding season.	Mitigation Measure WIL-7 requires pre-construction surveys and nest avoidance if construction takes place during breeding season.
Perform clearance surveys to locate and identify active nests or bat colonies	The results of pre-application bat surveys are summarized in Table 3.4-1. No roosting habitat for bats exists onsite.	The results of pre-application bat surveys are summarized in Table 3.4-1. No roosting habitat for bats exists onsite.	The results of pre-application bat surveys are summarized in Table 3.4-1. No roosting habitat for bats exists onsite.
Conduct surveys for golden eagle nests each year during construction activities within the nesting season.	The results of pre-application golden eagle surveys are summarized in Table 3.4-1. No nesting habitat for golden eagles exists onsite.	The results of pre-application golden eagle surveys are summarized in Table 3.4-1. No nesting habitat for golden eagles exists onsite.	The results of pre-application golden eagle surveys are summarized in Table 3.4-1. No nesting habitat for golden eagles exists onsite.
Conduct clearance surveys for burrowing owls, including a 150-m buffer area.	Mitigation Measure WIL-9 requires burrowing owl surveys within 656 foot of any construction area.	Mitigation Measure WIL-9 requires burrowing owl surveys within 656 foot of any construction area.	Mitigation Measure WIL-9 requires burrowing owl surveys within 656 foot of any construction area.
Conduct mandatory site training for all construction personnel regarding avoidance of nests and bat colonies and other biological resources.	Mitigation Measure VEG-6 requires a Worker Environmental Awareness Program.	Mitigation Measure VEG-6 requires a Worker Environmental Awareness Program.	Mitigation Measure VEG-6 requires a Worker Environmental Awareness Program.
Conduct raven management on-site for the life of the Project; including water and refuse control to avoid creating attractions for birds or bats.	Mitigation Measure WIL-5 specifies requirements for raven management for the life of the Project.	Mitigation Measure WIL-5 specifies requirements for raven management for the life of the Project.	Mitigation Measure WIL-5 specifies requirements for raven management for the life of the Project.
Develop and implement an Integrated Weed Management Plan.	APM BIO-5 specifies the components of the Applicant's Integrated Weed Management Plan.	APM BIO-5 specifies the components of the Applicant's Integrated Weed Management Plan.	APM BIO-5 specifies the components of the Applicant's Integrated Weed Management Plan.
Use native species for seeding and planting during re-vegetation efforts.	Section 2.3.7.2 discusses the requirement for a VRMP, including use of native species.	Section 2.3.7.2 discusses the requirement for a VRMP, including use of native species.	Section 2.3.7.2 discusses the requirement for a VRMP, including use of native species.

2.9.2.4 Alternative Energy Projects

Table 2-8 describes alternative types of energy technologies and sources that were considered by the BLM but not carried forward for detailed analysis and the agency's rationale for dismissing from further review.

Table 2-8. Other Types of Energy Projects Eliminated from Detailed Analysis

Alternative	Responsiveness to Purpose and Need	Meets Policy Objectives	Feasibility	Environmental Criteria
Stirling Dish Technology Uses mirrors distributed over a parabolic dish surface to concentrate sunlight on a receiver fixed at the focal point. Uses a working fluid such as hydrogen that is heated up to temperatures of approximately 1,200° F in the receiver to drive an engine. A dish will generate 5-30 kilowatts (kW) of electricity depending on the system. Stirling Energy Systems' 25 kW SunCatcher™ is 38 feet tall and 40 feet wide.	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would meet policy objectives associated with development of renewable energy and reducing GHG emissions.	Stirling Dish Technology is the proprietary technology of Stirling Energy Systems, which filed for bankruptcy in September, 2011. As such, it is not currently commercially available. Two utility-scale projects were proposed to use this technology, and both have either been withdrawn or re-proposed using a different technology.	With a minimum size of nearly 4,500 acres for 500 MW, Stirling Dish Technology would increase the footprint of the DQSP and, due to the greater height of this technology, also would increase visual impacts relative to the Proposed Action.
Solar Power Tower Technology A flat mirror "heliostat" system that tracks the sun and focuses solar energy on a central receiver at the top of a high tower. The focused energy is used to heat a transfer fluid to produce steam and run a central power generator.	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would meet policy objectives associated with development of renewable energy and reducing GHG emissions.	This technology has been approved and is operating on BLM lands, but more recent project applications have faced significant public opposition. There are no active applications pending before BLM for projects using this technology.	No substantial reduction in impacts would occur under this technology. The large area needed for a solar power tower plant would exceed the land requirement for the DQSP, and the height of the heliostats would increase visual impacts relative to the Proposed Action, the heliostats could cause impacts to air traffic at the Blythe Airport, and the combination of the tower and heliostats would have a greater impact on avian species.

Table 2-8. Other Types of Energy Projects Eliminated from Detailed Analysis

Alternative	Responsiveness to Purpose and Need	Meets Policy Objectives	Feasibility	Environmental Criteria
Linear Fresnel Technology Uses long parallel rows of flat mirrors to focus the sun's energy onto elevated receivers, which consist of a system of tubes through which water flows. The concentrated sunlight boils the water, generating high-pressure steam for direct use in power generation and industrial steam applications.	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would meet policy objectives associated with development of renewable energy and reducing GHG emissions.	Ausra operates a 5 MW plant in Bakersfield. There is no indication that the company, which has changed its focus to medium-sized (50 MW) solar steam generating systems, would be available or interested in developing a project with sufficient capacity to take the place of the Proposed Action.	Solar thermal technologies generally require water use, as well as project structures which have greater visual impacts than PV projects.
Parabolic Trough Technology Uses a series of parabolic-shaped mirrors to focus sunlight on a pipe containing a thermal fluid. The fluid flows to a central power plant which uses a steam cycle to generate electricity.	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would meet policy objectives associated with development of renewable energy and reducing GHG emissions.	This technology has been approved and is operating on BLM lands.	Solar thermal technologies generally require water use, as well as project structures which have greater visual impacts than PV projects.

Table 2-8. Other Types of Energy Projects Eliminated from Detailed Analysis

Alternative	Responsiveness to Purpose and Need	Meets Policy Objectives	Feasibility	Environmental Criteria
Distributed Solar Generation Uses small, modular power generators, typically up to 50MW, located at or near customer demand.	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would not meet BLM's renewable energy goals, as there are limited, if any, disturbed public lands where BLM might co-locate a distributed generation project of equivalent size.	To be a viable alternative to the DQSP, there would have to be sufficient newly installed solar panels to generate 450 MW of capacity. The rate of PV manufacturing and installation is expected to continue to grow and larger distributed solar PV installations are becoming more common. California has approximately 40 million square feet (approximately 920 acres) of distributed solar. An additional approximately 90 million square feet (approximately 2,100 acres) would be required to provide 450 MW. In addition to planning and permitting barriers, replacing the action alternatives with a DG solar energy alternative would be speculative based on existing limitations on the integration of DG into the electric grid. The present electric grid, built decades ago, was based on a centralized generation approach and was not designed to handle high levels of distributed renewable energy systems.	Distributed sources may allow some portion to be constructed on previously disturbed areas, thus reducing land overall land use of undisturbed sites.
Wind Power	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would be inconsistent with BLM's prior programmatic determination that the Project site is most suitable for solar development.	The BLM manages 20.6 million acres of public lands with wind potential. The BLM has authorized 198 ROWs for the use of public lands for wind energy site testing or development. Of these, 29 authorizations have a total installed capacity of 437 MW.	Wind energy projects could cause significant impacts to biological, visual, cultural, water, and soils resources. Accordingly, these alternatives would not reduce impacts relative to the Proposed Action.

Table 2-8. Other Types of Energy Projects Eliminated from Detailed Analysis

Alternative	Responsiveness to Purpose and Need	Meets Policy Objectives	Feasibility	Environmental Criteria
Geothermal Power	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would be inconsistent with BLM's prior programmatic determination that the Project site is most suitable for solar development.	Of the geothermal producing leases managed by the BLM nationally, 59 leases generate about 1,275 MW of installed geothermal energy. The 2008 programmatic EIS relating to BLM's authorization of geothermal leasing estimates a potential for 5,540 MW of new electric generation capacity from 111 new geothermal power plants in 12 western states, and an additional 6,600 MW from another 133 plants by 2025. In California, 14 parcels have been competitively leased. However, geothermal energy production would not be a feasible alternative use for the public land identified in the ROW application given that there are no known geothermal resources in the area.	If a geothermal power project were feasible it would reduce effects on air quality, and cultural and biological resources as geothermal power projects use less land; however, they can cause visual impacts and produce waste and byproducts such as hydrogen sulfide that can have impacts on air quality. Spills of geothermal fluids when pipes break can lead to soil and groundwater contamination.
Biomass	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would not meet BLM's or the County's objectives to meet Federal and state renewable energy development goals.	Most biomass facilities produce only small amounts of electricity (in the range of 3 to 10 MW) and so could not produce an amount of energy necessary to replace the DQSP. Thus, it would be technically infeasible at the scale required to replace the DQSP.	Biomass facilities generate significant air emissions especially short-lived climate pollutants such as methane, and require numerous truck deliveries to supply the plant with the waste. Other environmental concerns associated with biomass relate to the emission of toxic chemicals, such as dioxin, and the disposal of the toxic ash that results from biomass burning. Accordingly, these alternatives would not reduce impacts relative to the Proposed Action.

Table 2-8. Other Types of Energy Projects Eliminated from Detailed Analysis

Alternative	Responsiveness to Purpose and Need	Meets Policy Objectives	Feasibility	Environmental Criteria
Tidal Energy	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would not meet BLM's or the County's objectives to meet Federal and state renewable energy development goals.	The use of tidal fence technology is limited to areas that are adjacent to body of water with a large difference between high and low tides (unlike the proposed site). In-flow tidal turbines are a relatively new technology, unproven at the scale that would be required to replace the DQSP.	Tidal energy alternatives could create significant environmental impacts to ocean ecosystems.
Wave Energy	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would not meet BLM's or the County's objectives to meet Federal and state renewable energy development goals.	The use of wave energy technology is limited to areas that are adjacent to body of water with significant wave action (unlike the proposed site). Because wave energy technology is new, it is not known whether it would be technologically feasible at the scale required to replace the DQSP.	If a wave energy project were feasible, aesthetic, biological resource, vessel traffic, and recreation impacts may increase. There would also be potential impacts on the size and amount of waves with possible effects to beaches (e.g., changes to sediment transport processes).
Natural Gas	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would not meet BLM's or the County's objectives to meet Federal and state renewable energy development goals.	Technically feasible.	Air quality impacts would increase as a result of operational emissions of short-lived climate pollutants, e.g., methane, from the power plant. Impacts would occur off site from construction of natural gas and water supply lines resulting in potentially greater impacts to air quality, biological, cultural, groundwater, hazardous materials, land use, utilities, and visual resources.

Table 2-8. Other Types of Energy Projects Eliminated from Detailed Analysis

Alternative	Responsiveness to Purpose and Need	Meets Policy Objectives	Feasibility	Environmental Criteria
Coal	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would not meet BLM's or the County's objectives to meet Federal and state renewable energy development goals.	Technically feasible.	Impacts associated with air quality, greenhouse gas, and health risks would increase substantially. Impacts would also occur from transportation of coal to the power plant. Impacts would occur off site from construction of a water supply line resulting in potentially greater air quality, biological, cultural, groundwater, land use, utilities, and visual resources impacts.
Nuclear Energy	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would not meet BLM's or the County's objectives to meet Federal and state renewable energy development goals.	The permitting of new nuclear facilities in California is currently illegal, so the implementation of this technology would be legally infeasible.	Greater impacts would result from a nuclear power plant, including the impacts from the need for obtaining large quantities of water at the project site.
Conservation and Demand-Side Management Consists of a variety of approaches to reduce electricity use, including energy efficiency and conservation, building and appliance standards, and load management and fuel substitution.	Would not meet BLM's purpose and need to respond to an application for a solar PV facility on public lands.	Would not meet BLM's or the County's objectives to meet Federal and state renewable energy development goals.	Energy conservation is an active goal handled by local utilities and the state, but ongoing growing demand and the state's renewable energy initiatives will still require development of additional generating capacity.	Would reduce effects on all environmental resources.

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CHAPTER 3
AFFECTED ENVIRONMENT

3.1 Introduction

The Applicant proposes to construct, operate, maintain, and decommission a 450 MW solar PV energy generating facility and related infrastructure in unincorporated Riverside County, California, to be known as the Desert Quartzite Solar Project (DQSP; the Project).

If approved, the Project would be located on a combination of public land administered by the BLM and private land under the jurisdiction of the County. The Project would be located approximately 2.75 miles southwest of the City of Blythe, just south of the Interstate 10 (I-10) freeway, and 1.5 miles southwest of Blythe Airport in Riverside County, California (Figure 2-1). The Applicant is seeking a ROW grant for approximately 3,616 acres from BLM, as well as authorization from the County to develop a 160-acre parcel of private land that is surrounded by the BLM land. The corridor for the proposed 230 kV transmission gen-tie line would exit the solar facility at the northwest corner, and traverse approximately 2.79 miles west to the CRSS.

The total Project area would be 3,770 acres, including the portion of the solar facility on BLM land, the portion of the solar facility on private land, the gen-tie corridor on BLM land, and the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land. Within this 3,770 acre site, construction and operation would disturb approximately 3,714 acres for the solar plant site, 54 acres for the gen-tie line corridor with a width of 160 feet, and 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land. In addition, temporary construction areas totaling 61 acres would be disturbed, although they would not be included within the long-term ROW. The total amount of ground disturbance would be 3,831 acres.

The Proposed Action would utilize solar PV technology to generate electricity. With this technology, arrays of solar PV modules (or panels) collect radiant energy from the sun and convert it directly into DC electrical energy. The assemblies would be organized into arrays. Each array would be approximately 800 feet long, and 500 feet wide. The exact placement of the arrays within the Project area would be based on topography and geotechnical conditions, and may also be modified to avoid biological or other resources.

Chapter 3 describes the resources, resource uses, special designations, and other important topics (including public health and safety, social and economic considerations, and environmental justice conditions) that may be impacted by the Proposed Action. “Resources” include air, soil, water, vegetative alliances, wildlife, wildland fire ecology and management, as well as cultural, paleontological, and visual resources. “Resource uses” include land use planning and realty, minerals, recreation management, public services, transportation and public access, and utilities and service systems. “Special designations” include areas of critical environmental concern (ACECs), wilderness areas, wilderness study areas, and lands with wilderness characteristics.

For each resource topic in Chapter 3, the affected environment and the existing environmental conditions, or “baseline conditions,” associated with the construction, operation, and decommissioning of the Project and alternatives are described. The baseline conditions are used for comparison to establish the type and extent of the potential environmental effects of the Project. In the following sections, the environmental setting is described within a defined Project

area and a regional vicinity context, with a focus on the particular environmental impacts being discussed. The term "Project area" refers to the entire 3,831 acres that would be disturbed for both the permanent ROW and temporary construction areas. As discussed in Chapter 2, this Draft PA/EIS/EIR analyzes three action alternatives, including the Proposed Action (Alternative 1), a Resource Avoidance Alternative (Alternative 2), and a Reduced Project Alternative (Alternative 3). The Draft PA/EIS/EIR also analyzes the No Action Alternative (Alternative 4). The geographic scope of analysis of each alternative varies based on the resource being evaluated, and the predicted locations of direct and indirect effects of the Proposed Action.

Information and data used to prepare this chapter were obtained from the CDCA Plan of 1980, as amended, various BLM planning and NEPA documents, County of Riverside General Plan, and applicable regulations and plans. Information and data also were collected from many other related planning documents and research publications prepared by various Federal, state, and local agencies as well as from private sources pertaining to key resource conditions and resource uses found within the Project area, along with surveys and studies conducted for the Project by the Applicant. The purpose of this chapter is to provide a description of affected resources and resource uses within the existing environment of the Project area, which will be used as a baseline to evaluate and assess the direct, indirect, and cumulative impacts of the Proposed Action and alternatives described in Chapter 2. Descriptions and analyses of the impacts themselves are presented in Chapter 4, Environmental Consequences.

Regulations, plans, and policies including Federal, state, and local laws related to each resource topic that may be relevant to the Proposed Action are summarized in Appendix D.

3.2 Air Resources

This section describes the existing meteorological conditions, baseline air quality, and sensitive receptors associated with the Project area.

3.2.1 Environmental Setting

3.2.1.1 Regional Climate

The Project site is located in southeastern California, in the Colorado Desert. The climate in the Blythe area is categorized as a desert climate, with dry, hot summers and mild winters. The region is characterized by extreme fluctuations of daily temperatures, strong seasonal winds, and clear skies. January is the coldest month, with a mean low temperature of 41.7 degrees Fahrenheit (°F). July is the hottest month, with a mean high temperature of 108.4°F.

Temperature and precipitation data were measured at Blythe from July 1948 through June 2016 (Western Regional Climate Center [WRCC] 2018a). The mean temperature for the Blythe station is 73.7°F, and the mean annual precipitation is 3.55 inches. More than half of the precipitation occurs between November and March. Although rainfall occurs primarily in the winter months, the region is periodically influenced by subtropical weather conditions, especially sudden monsoonal late summer storms. Monthly average temperatures and precipitation for the area are summarized in Table 3.2-1.

A wind rose from Blythe Airport, for the years 2008 to 2018, is shown in Figure 3.2-1. This figure shows the predominant wind directions in the Project area are from the northwest, south, and southwest.

Table 3.2-1. Monthly Average Temperature and Precipitation, Blythe Meteorological Station

Month	Monthly Average Temperature (°F)		Precipitation (Inches)
	Maximum	Minimum	Mean
January	66.9	41.7	0.48
February	71.9	45.4	0.44
March	78.5	50.2	0.35
April	86.4	56.5	0.15
May	95.2	64.5	0.02
June	104.5	72.7	0.02
July	108.4	81.1	0.28
August	106.7	80.3	0.60
September	101.5	73.1	0.34
October	89.8	60.8	0.26
November	75.9	48.6	0.19
December	66.6	41.3	0.41
Annual	87.7	59.7	3.55

Source: WRCC 2018a

3.2.1.2 Existing Air Quality

Air Quality Standards

The Federal Clean Air Act (CAA) and the California Clean Air Act (CCAA) both require the establishment of standards for ambient concentrations of air pollutants, called Ambient Air Quality Standards (AAQS). The Federal standards, the National AAQS (NAAQS) established by USEPA, are typically higher (less protective) than the California state (CAAQS), which are established by the California Air Resources Board (CARB). The Federal and state air quality standards are listed in Table 3.2-2. The times over which the various air quality standards are measured range from 1 hour to an annual average. The standards are read as a concentration, in parts per million (ppm), or as a weighted mass of material per a volume of air, in milligrams or micrograms of pollutant in a cubic meter of air (mg/m3 or µg/m3, respectively).

Table 3.2-2. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)
	1 Hour	—	0.09 ppm (180 µg/m^3)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)[a]	Annual	0.053 ppm (100 µg/m^3)	0.030 ppm (57 µg/m^3)
	1 Hour	0.100 ppm[a] (188 µg/m^3)	0.18 ppm (339 µg/m^3)
Sulfur Dioxide (SO_2)[b]	Annual	0.030 ppm for certain areas	—
	24 Hour	0.14 ppm for certain areas	0.04 ppm (105 µg/m^3)
	3 Hour	0.5 ppm (1,300 µg/m^3)	—
	1 Hour	0.075 ppm[b] (196 µg/m^3)	0.25 ppm (655 µg/m^3)
Particulate Matter (PM_{10})	Annual	—	20 µg/m^3
	24 Hour	150 µg/m^3	50 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	Annual	12.0 µg/m^3	12 µg/m^3
	24 Hour	35 µg/m^3	—
Sulfates (SO_4)	24 Hour	—	25 µg/m^3
Lead	30 Day Average	—	1.5 µg/m^3
	Calendar Quarter	1.5 µg/m^3	—
	Rolling 3-Month Average	0.15 µg/m^3	—
Hydrogen Sulfide (H_2S)	1 Hour	—	0.03 ppm (42 µg/m^3)
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 µg/m^3)
Visibility Reducing Particulates	8 Hour	—	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%.

Table 3.2-2. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard

Notes:
a -To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.
b - On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Source: CARB 2015a, USEPA 2015b

Ambient Air Quality Data

The Proposed Action and Alternatives are located within the MDAQMD. A summary of the various emission sources that contribute to ambient air quality in the Project area is presented in Tables 4.2-11 and 4.2-12 in Section 4.2.6.

Ambient air concentrations of pollutants are measured at monitoring stations in Riverside and San Bernardino counties operated by CARB and/or MDAQMD. Table 3.2-3 presents ambient air quality data for the region from 2011 to 2016. Due to the remote location, no monitoring stations with complete data sets are close to the Project site, except for except for the 445 West Murphy Street monitoring station at Blythe with data for ozone. PM_{10}, $PM_{2.5}$, NO_2, and CO data are from the Palm Springs Fire Station monitoring station (105 miles distant); and SO_2 data are from the Victorville-14306 Park Avenue monitoring station (160 miles distant). The air quality monitoring data were compared to the most stringent applicable standards for the years 2011 through 2016 at the most representative monitoring stations for each pollutant.

According to the NECO Plan Amendment to the CDCA Plan, the ozone standard is exceeded due to long-distance transport of pollutants from the Los Angeles Basin In contrast the PM_{10} exceedance is due to natural sources occurring with various land uses found in a desert environment. These uses include OHV use, mining, crop agricultural, and livestock grazing. The PM_{10} concentrations are from fugitive dust emission sources, rather than from combustion particulate or secondary particulate emission sources (BLM 2002).

Table 3.2-3. Summary of Available Air Quality Data for the Project Area (2011 to 2016)

Pollutant	Parameter	2011	2012	2013	2014	2015	2016
Ozone	Days above 1-hr CAAQS (0.09 ppm)	0	0	0	0	0	0
	Days above 8-hr CAAQS (0.070 ppm)	0	12	0	16	0	0
	Days above 8-hr NAAQS (was 0.075 ppm during 2011 to 2013, 0.70 after 2013)	0	9	0	12	0	ND
Nitrogen dioxide (NO_2)	Days above the CAAQS (180 ppb)	0	0	0	0	0	0
	Days above the NAAQS (100 ppb)	0	0	0	0	0	0

Table 3.2-3. Summary of Available Air Quality Data for the Project Area (2011 to 2016)

Pollutant	Parameter	2011	2012	2013	2014	2015	2016
Respirable Particulate matter less than or equal to 10 microns in diameter (PM_{10})	Days above CAAQS (50 $\mu g/m^3$)	0	0	2	2	2	ND
	Days above NAAQS (150 $\mu g/m^3$)	2	0	1	1	1	1
Fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$)	Days above NAAQS (35 $\mu g/m^3$)	0	0	0	0	0	0
Carbon monoxide (CO)	Days above the CAAQS (9.0 ppm)	0	0	0	0	ND	ND
	Days above the NAAQS (9 ppm)	0	0	0	0	ND	ND

Notes:
ND = no data available.
Monitoring data from USEPA and ARB monitoring databases http://www.epa.gov/airdata/ and http://www.arb.ca.gov/adam/.
O_3 data are from Blythe; PM_{10}, $PM_{2.5}$, NO_2, and CO data are from Palm Springs. SO_2 data not available.
Source: CARB 2018.

Attainment Status

Areas that do not meet the NAAQS or CAAQS for a given criteria pollutant are designated as "non-attainment areas" by the USEPA and/or the CARB. Further classifications are given to non-attainment areas to identify the severity and number of violations experienced, and the year in which attainment is anticipated based on implementation of attainment plans. In circumstances where ambient data is not sufficiently available to support designation as either attainment or non-attainment, the area can be designated as "unclassified". An unclassified area is normally treated by the USEPA in the same way as an attainment area for regulatory purposes.

Table 3.2-4 summarizes the site area's attainment status for various applicable state and Federal standards. The air basin for the Project area is considered an unclassified/attainment area for all of the NAAQS. The air basin is considered a non-attainment area for the CAAQSs for O_3 and PM_{10}. The air basin is considered "unclassified/attainment" for all other CAAQS.

Table 3.2-4. Federal and State Attainment Status for the Mojave Desert Air Basin within Riverside County

Pollutant	Attainment Status[a]	
	Federal	State
Ozone	Unclassified/Attainment[b]	Non-attainment
CO	Unclassified/Attainment	Unclassified
NO_2	Unclassified/Attainment[c]	Attainment
SO_2	Unclassified	Attainment
PM_{10}	Unclassified/Attainment[b]	Non-attainment
$PM_{2.5}$	Unclassified/Attainment	Unclassified

Table 3.2-4. Federal and State Attainment Status for the Mojave Desert Air Basin within Riverside County

Pollutant	Attainment Status[a]

Notes:
a - Attainment = Attainment or Unclassified, where Unclassified is treated the same as Attainment for regulatory purposes.
b - Attainment status for the Mojave Desert Air Basin within Riverside County only, not the entire air basin. For ozone, the attainment level is for the old standard of 0.075 ppm, not the new standard of 0.070 ppm (effective December 28, 2015)
c - Nitrogen dioxide attainment status for the new Federal 1-hour NO_2 standard was determined on February 29, 2012.
Source: CARB 2015b, USEPA 2015a, USEPA 2015c.

3.2.1.3 Criteria Air Pollutants

The following subsections describe the source and associated health effects of the Criteria Air Pollutants.

Ozone (O_3)

Ozone (O_3) is not directly emitted from stationary or mobile sources, but is formed as the result of chemical reactions in the atmosphere between directly emitted O_3 precursors, primarily nitrogen oxides (NO_x), and hydrocarbons (volatile organic compounds or VOCs) being of primary concern, in the presence of sunlight. Pollutant transport from the South Coast Air Basin (Los Angeles Area) is one source of the pollution experienced in the eastern Riverside County portion of the Mojave Desert Air Basin (MDAB).

The 1- and 8-hour ozone concentrations measured at the eastern border of Riverside County have been very slowly decreasing over time. The raw collected air quality data indicate that the ozone violations occurred primarily during the sunny and hot periods typical during May through September.

O_3 is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma and increase susceptibility to respiratory infections. Exposure to levels of ozone above the current ambient air quality standard can lead to human health effects such as lung inflammation, tissue damage, impaired lung function, coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms. Harmful health effects are associated with outdoor workers, athletes, children and others who spend greater amounts of time outdoors during smoggy periods.

Nitrogen Dioxide (NO_2)

The entire MDAB is classified as attainment for the state 1-hour and annual and Federal annual NO_2 standards. The NO_2 attainment standard could change due to the new Federal 1-hour standard, but a review of the air basin-wide monitoring data suggests that the prospective new standard would not changes the status for NO_2 in the MDAB.

Approximately 90 percent of the NO_x emitted from combustion sources is nitric oxide (NO), while the balance is NO_2. NO is oxidized in the atmosphere to NO_2, but some level of photochemical activity is needed for this conversion. The highest concentrations of NO_2 typically occur during the fall. The winter atmospheric conditions can trap emissions near ground level, but with less substantial photochemical activity (sun light), NO_2 levels are relatively low. In the summer the conversion rates of NO to NO_2 are high, but the relatively high temperatures

and windy conditions disperse pollutants, preventing the accumulation of NO_2. The NO_2 concentrations in the Project area are well below the NAAQS and CAAQS.

NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. Exposure to NO_2 along with other traffic-related pollutants, is associated with respiratory symptoms, episodes of respiratory illness and impaired lung functioning.

Carbon Monoxide (CO)

The MDAB is classified as attainment for the state and Federal 1- and 8-hour CO standards. The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level. These conditions occur frequently in the wintertime late in the afternoon, persist during the night and may extend 1 or 2 hours after sunrise. The Project area has a lack of significant mobile source emissions and has CO concentrations that are well below the NAAQS and CAAQS.

Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen. Exposure to CO is especially harmful to those with heart disease and has been associated with aggravation of angina pectoris and other aspects of coronary heart disease, decreased exercise tolerance in people with peripheral vascular disease and lung disease, impairment of central nervous system functions, and possible increased risk to fetuses.

Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)

PM_{10} can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere.

MDAB is classified as non-attainment for state PM_{10} standards and unclassified for the Federal PM_{10} standard (CARB 2015b). Table 3.2-3 shows recent PM_{10} and $PM_{2.5}$ concentrations, and shows clear exceedances of the state 24-hour PM10 standard. It should be noted that an exceedance does not necessarily mean violation or non-attainment, as exceptional events do occur and some of those events, which may not count as violations, may be included in the data. The MDAB is designated as non-attainment for the state PM_{10} standard.

Fine particulate matter, or $PM_{2.5}$, is derived mainly either from the combustion of materials, or from precursor gases (SO_x, NO_x, and VOC) through complex reactions in the atmosphere. $PM_{2.5}$ consists mostly of sulfates, nitrates, ammonium, elemental carbon, and a small portion of organic and inorganic compounds.

The entire MDAB is classified as attainment for the Federal standard and, in the Project area, is designated unclassified for the state $PM_{2.5}$ standards. As indicated in Table 3.2-3, $PM_{2.5}$ concentrations did not exceed applicable standards during the 5-year study period. This divergence in the PM_{10} and $PM_{2.5}$ concentration levels and attainment status indicates that a substantial fraction of the ambient particulate matter levels are most likely due to localized fugitive dust sources, such as vehicle travel on unpaved roads, agricultural operations, or wind-blown dust. Fugitive dust, unlike combustion source particulate and secondary particulate, is composed of a much higher fraction of larger particles than smaller particles, so the $PM_{2.5}$ fraction of fugitive dust is much smaller than the PM_{10} fraction. Therefore, when PM_{10} ambient concentrations are significantly higher than $PM_{2.5}$ ambient concentrations this tends to indicate

that a large proportion of the PM_{10} are from fugitive dust emission sources, rather than from combustion particulate or secondary particulate emission sources.

Particulates may lead to excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease.

Sulfur Dioxide (SO_2)

The entire MDAB is classified as attainment for the state and Federal SO_2 standards.

Sulfur dioxide is typically emitted as a result of the combustion of a fuel containing sulfur. Sources of SO_2 emissions within the MDAB come from a wide variety of fuels: gaseous, liquid and solid; however, the total SO_2 emissions within the eastern MDAB are limited due to the limited number of major stationary sources and California's and USEPA's substantial reduction in motor vehicle fuel sulfur content. The Project area's SO_2 concentrations are well below the NAAQS and CAAQS.

Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most susceptible to these symptoms. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

3.2.1.4 Toxic Air Contaminants

Toxic air contaminants (TACs) are substances that have the potential to be emitted into the ambient air that have been determined to present some level of acute or chronic health risk (cancer or non-cancer) to the general public. These pollutants may be emitted in trace amounts from various types of sources, including combustion sources. TACs that may be produced by construction and operation of the proposed Project are listed in Table 3.2-5, including the most relevant health effects. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines (CARB 2011).

Table 3.2-5. Toxic Air Contaminants and Associated Health Effects

Contaminant	Characteristics	Health Effects
Vinyl Chloride	This chlorinated hydrocarbon is a colorless gas with a mild, sweet odor.	Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness and headaches. Long-term exposure through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure via inhalation.

Table 3.2-5. Toxic Air Contaminants and Associated Health Effects

Contaminant	Characteristics	Health Effects
Benzene	Benzene is found in the air from emissions from burning coal and oil, gasoline service stations, and motor vehicle exhaust.	Short-term inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Long-term inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects and increased incidences of leukemia have been observed in humans occupationally exposed to benzene. A Group A human carcinogen.
Formaldehyde	Formaldehyde exposure may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air.	Short-term and long-term inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Short-term high exposure may lead to eye, nose and throat irritation, and in the respiratory tract, nasal obstruction, pulmonary edema and dyspnea. Prolonged or repeated exposures have been associated with allergic sensitization, respiratory symptoms, and decrements in lung function. A Group B1 probable human carcinogen.
Diesel Particulate Matter (DPM)	Diesel particulate matter is emitted from both mobile and stationary sources of diesel powered on-road and off-road equipment.	Occupational exposures to diesel exhaust particles have been associated with significant cross-shift decreases in lung function. Increased cough, labored breathing, chest tightness, and wheezing have been associated with exposure to diesel exhaust in bus garage workers. A number of adverse long-term non-cancer effects have been associated with exposure to diesel exhaust. Occupational studies have shown that there may be a greater incidence of cough, phlegm and chronic bronchitis among those exposed to diesel exhaust than among those not exposed. Reductions in pulmonary function have also been reported following occupational exposures in chronic studies. Exposure to diesel exhaust has also shown cellular changes in laboratory animals.
Acrolein	Acrolein is a powerful irritant.	Short-term exposures to levels above 1.0 ppm result in mucous hypersecretion and exacerbation of allergic airway response in animal models. Moderately higher exposures may result in severe lacrimation, and irritation of the mucous membranes of the respiratory tract. Death due to respiratory failure has been associated with high level exposures. Long term exposure to acrolein may result in structural and functional changes in the respiratory tract, including lesions in the nasal mucosa, and pulmonary inflammation.
1,3–Butadiene	Motor vehicle exhaust is a constant source of 1,3-butadiene. Although 1,3-butadiene breaks down quickly in the atmosphere, it is usually found in ambient air at low levels in urban and suburban areas.	Short-term exposure to 1,3-butadiene by inhalation in humans results in irritation of the eyes, nasal passages, throat, and lungs. The EPA has classified 1,3-butadiene as carcinogenic to humans by inhalation.

Table 3.2-5. Toxic Air Contaminants and Associated Health Effects

Contaminant	Characteristics	Health Effects
Naphthalene	Naphthalene is used in the production of phthalic anhydride; it is also used in mothballs.	Short-term exposure of humans to naphthalene by inhalation, ingestion, and dermal contact is associated with hemolytic anemia, damage to the liver, and neurological damage. Cataracts have also been reported in workers acutely exposed to naphthalene by inhalation and ingestion. Long-term exposure of workers and rodents to naphthalene has been reported to cause cataracts and damage to the retina. Hemolytic anemia has been reported in infants born to mothers who "sniffed" and ingested naphthalene (as mothballs) during pregnancy. A Group C, possible human carcinogen.
Polycyclic Organic Matter (POM)	The term polycyclic organic matter (POM) defines a broad class of compounds that includes the polycyclic aromatic hydrocarbon compounds (PAHs), of which benzo[a]pyrene is a member. POM compounds are formed primarily from combustion and are present in the atmosphere in particulate form. Sources of air emissions are diverse and include cigarette smoke, vehicle exhaust, home heating, laying tar, and grilling meat.	Cancer is the major concern from exposure to POM. Epidemiologic studies have reported an increase in lung cancer in humans exposed to coke oven emissions, roofing tar emissions, and cigarette smoke; all of these mixtures contain POM compounds. Animal studies have reported respiratory tract tumors from inhalation exposure to benzo[a]pyrene and forestomach tumors, leukemia, and lung tumors from oral exposure to benzo[a]pyrene. The EPA has classified seven PAHs (benzo[a]pyrene, benz[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene) as Group B2, probable human carcinogens.

Source: SRA 2013, as cited in Riverside County 2014

3.2.1.5 Sensitive Receptors

For the purposes of this air quality analysis, sensitive receptors are defined as facilities and land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and daycare centers. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, which results in greater exposure to ambient air quality.

The site is located in proximity to rural agricultural lands, undeveloped lands, uses associated with the Blythe Airport, power generation, local roads, and interstate highway and other non-sensitive uses. No schools, hospitals, convalescent homes or any other sensitive receptors are located within one mile of the proposed Project. The closest residence (apparent occupied mobile home trailer) is located approximately 3,700 feet north of the northeast corner of the Project boundary. The next two closest sensitive air quality receptors are located in the residential community of Nicholls Warm Springs/Mesa Verde approximately 4,800 feet north of the northeast corner of the Project site boundary.

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3.3 Biological Resources – Vegetation

This section describes the environmental setting relevant to vegetation resources, including existing vegetation alliances; special-status plant species including species managed under the California Desert Native Plant Act; cacti; and noxious weeds that are present within and surrounding the Project area. It also lists the special-status plant species that have potential to occur but that were not observed during focused botanical surveys.

This discussion is based primarily upon information from these sources:

1. Biological Resources Technical Report (Ironwood 2016, provided in Appendix M) and Western EcoSystems Technology memorandum (WEST 2018, also included in Appendix M);
2. Identification and Delineation of Areas Potentially Subject to Jurisdiction Under the California Department of Fish and Wildlife Lake and Streambed Alteration Agreement Program (Huffman-Broadway Group 2017, provided in Appendix N).
3. Investigation of the Presence of Corps and US EPA Jurisdictional Waters (Huffman-Broadway Group 2015, provided in Appendix I).
4. California Natural Diversity Database (CDFW 2016);
5. NECO Plan Amendment to the CDCA Plan (BLM 2002);
6. Consortium of California Herbaria (Consortium of California Herbaria 2012); and
7. All BLM California Special Status Plants (BLM 2015).

Generally, the Study Area for vegetation resources included a 5,045-acre area consisting of public lands administered by the BLM (4,885 acres) and private land under the land use jurisdiction of Riverside County (160 acres) (Figure 3.3-1). The privately-owned portion of the Study Area is generally referred to herein as the "160-acre private inholding." Inventories of individual special-status species, succulent plant species (cacti), and nonnative invasive species were limited to within the 5,045-acre Study Area.

3.3.1 Environmental Setting

The Study Area is located in the Colorado Desert. The Colorado Desert is a part of the larger Sonoran Desert, which extends across the southwest United States and into Mexico. The climate is very hot and dry in the summer months, and mild in the winter.

The Study Area is specifically located on the Palo Verde Mesa on the west bank of the Colorado River. The Study Area is relatively flat and ranges in elevation from approximately 330 feet above mean sea level (amsl) at the southeast corner to 475 feet amsl in the northwest (USGS 1983). The Study Area is near the McCoy Mountains on the north, the Mule Mountains on the southwest, and the Colorado River on the east. Surface water is ephemeral on Palo Verde Mesa and consists of limited seasonal and perennial sources. The closest perennial water is the Colorado River, which lies approximately 10 miles east of the eastern edge of the Study Area.

The 160-acre private inholding, which is surrounded on all sides by BLM land, was previously a jojoba farm. Rows of jojoba (*Simmondsia chinensis*), a species native to the region, were planted

in a north-south orientation at approximately 4 meter spacing. These rows are slightly raised to cover the buried three-fourths inch perforated irrigation pipe running their entire length. There is a wellhead and some debris remaining at the northeast corner entrance to the site. Of the thousands of jojoba that were planted about one third currently survive without any maintenance. However, the health of the existing plants is diminished; most are dying-back from their center outwards but a few are still flowering and fruiting. Since abandonment, native vegetation seems to be recovering slowly.

Generally, the Study Area is dominated by desert scrub vegetation. In total, 124 plant species were detected in the Study Area during botanical field surveys. Of this total, 114 species are native, while 10 species are nonnative. Vegetation alliances, special-status plant species, cacti, and noxious weeds documented during botanical field surveys are discussed further in the following subsections.

3.3.1.1 Vegetation Alliances

Information used to support the analysis of vegetation alliances includes:

- Site-specific mapping of vegetation alliances by BLM;
- Vegetation cover maps used to support the DRECP;
- Site-specific vegetation and sand deposit mapping conducted by the Applicant; and
- Other sources available in the scientific literature.

Vegetation alliances were characterized by the BLM using the vegetation classification system used for the DRECP following Federal Geographic Data Committee (FGDC) and National Vegetation Classification Standards (NVCS). The vegetation alliances are shown in Figure 3.3-2, and the acreage of each alliance in the project area is shown in Table 3.3-1.

Table 3.3-1. Vegetation Alliances and Cover Types within Project Application Area

Vegetation Alliance	Acreage Within the Project Application Area
Anthropogenic areas of Little or No Vegetation	6.83
Built-up & Urban Disturbance	44.3
Chorizanthe rigida - Geraea canescens Desert Pavement Sparsely Vegetated	17.6
Larrea tridentata	2,922
Larrea tridentata - Ambrosia dumosa	1,893
Parkinsonia florida - Olneya tesota	13.8
Pleuraphis rigida	171.4
Woody Agriculture (orchards, vineyards)	161

Chorizanthe rigida – Geraea canescens Desert Pavement Alliance

The *Chorizanthe rigida – Geraea canescens* Desert Pavement Alliance, commonly known as Rigid spineflower – hairy desert sunflower, is found on the northern edge of the application area.

The alliance covers approximately 17.6 acres (0.3 percent) of the Project application area. As discussed in Section 1.1, the total Project area under application for BLM and County approval is approximately 5,275 acres, but the Project proposed by the Applicant would occupy approximately 3,770 acres of the total application area. The *Chorizanthe rigida – Geraea canescens* Desert Pavement Alliance occurs within the application area, but outside of the area proposed for development, approximately one mile north of the gen-tie line.

Larrea tridentata and *Larrea tridentata-Ambrosia dumosa* Alliances

The *Larrea tridentata* alliance, commonly known as creosote bush scrub and *Larrea tridentata-Ambrosia dumosa* alliance, commonly known as creosote bush – white bursage scrub, are the dominant vegetation alliances, covering approximately 4,815 acres (92 percent) of the overall Project application area. Other species include Cheesebush (*Ambrosia salsola*), brittlebush (*Encelia farinosa*), Emory's indigo bush (*Psorothamnus emoryi*), big galleta grass (*Hilaria rigida*), and occasional cacti. These alliances are sparsely vegetated with widely scattered relatively low-growing individual shrubs. No creosote rings were reported by BLM, or in Ironwood (2016).

Sparse creosote bush (*Larrea tridentata*) was observed throughout the 160-acre private inholding and on the surrounding berms. These plants are probably re-growth from old root crowns, but some smaller new plants have taken hold. Other common native perennials appearing occasionally on the 160-acre private inholding include white bursage (*Ambrosia dumosa)* and brittlebush (*Encelia farinosa)*. Native annual plants recolonizing the site include desert pincushion (*Chaenactis stevioides),* brown-eyed primrose *(Chylismia claviformis),* narrowed-leaved popcorn flower *(Cryptantha angustifolia),* chuckwalla combseed *(Pectocarya heterocarpa),* Harwood's milkvetch *(Astragalus insularis* var. *harwoodii),* dwarf white milkvetch *(A. didymocarpus),* stigose bird's-foot trefoil *(Acmispon strigosus)*, and hairy desert sunflower (*Gerea canescens)*.

These alliances are not designated as sensitive plant communities by BLM (NECO Plan) and both have a State Rarity rank of S5, meaning that they are commonly found throughout their historic range.

Parkinsonia florida-Olneya tesota Alliance

The *Parkinsonia florida-Olneya tesota* alliance is commonly known as blue palo verde-ironwood woodland alliance. The alliance covers approximately 13.8 acres (0.3 percent) of the overall Project application area. The occurrence of the *Parkinsonia florida-Olneya tesota* alliance in the Project area is limited to the northeastern corner, adjacent to the NRG Blythe PV Project.

Like the *Chorizanthe rigida – Geraea canescens* Desert Pavement Alliance, the *Parkinsonia florida-Olneya tesota* alliance occurs within the application area, but outside of the area proposed for development. However, it is directly on the boundary of the Project area, within less than 100 feet of the Project. The area is adjacent to the Palowalla Sand Migration Zone (SMZ) mapped by Kenney (2017), and was mapped by Kenney (2017) as critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems. The area is also mapped as the FP1 active watercourse, a state jurisdictional water covering 34.14 acres, in Huffman-Broadway (2017).

The *Parkinsonia florida-Olneya tesota* alliance has a state rarity rank of S4.2, which is limited in distribution and moderately threatened in California. Blue palo verde-ironwood woodland is identified in DRECP as microphyll woodland, which is considered a Special Vegetation Feature, and is subject to Conservation and Management Actions (CMAs) under the DRECP. Although the Project is not subject to land use planning decisions in the DRECP, identification of the extent of impacts to the microphyll woodland assists in understanding the significance of the impacts of the Proposed Action and the alternatives.

Pleuraphis rigida Alliance

The *Pleuraphis rigida* alliance, commonly known as big galleta shrub-steppe, is found along the northern Project boundary, approximately coincident with the Project gen-tie corridor. The alliance covers approximately 171.4 acres (3.3 percent) of the overall Project application area. Big galleta (*Hilaria rigida*) is a densely branched perennial bunch grass that occurs locally on sand sheets and dunes. Co-dominants are widely scattered creosotes (*Larrea tridentata*), with occasional occurrences of Emory's indigo bush (*Psorothamnus emoryi*), desert wire lettuce (*Stephanomeria pauciflora*), fan-leaved tiquilia (*Tiquilia plicata*) and desert dicoria (*Dicoria canescens*). Dense infestations of the invasive weed Saharan mustard (*Brassica tournefortii*) are evident on many areas of this vegetation type.

The *Pleuraphis rigida* alliance has a state rarity rank of S2.2, which is moderately threatened in California.

3.3.1.2 Sand Dunes

As shown in Figure 3.3-2, the Project area is mapped as occurring within a regional sand corridor, which is the "Dunes/Sand" feature shown on DRECP Figure D-15.

Multiple authors have mapped the extent of sand deposits both onsite, and within the regional sand corridor. Most of these reports were either published in peer-reviewed literature, or were specifically developed by or for BLM in support of the DRECP. Studies by Zimbelman et al. (1995), Lancaster and Tchakerian (1996), Lancaster and Tchakerian (2003), Muhs et al. (2003), Potter and Weigand (2016), and Muhs et al. (2017) evaluate whether sand sources are expected to be active or dormant, or are expected to be regional in nature versus primarily local. Also, the agency has identified and considered other sources (Stone 2006, Hayhurst and Bedrossian 2010, Lancaster 2014, and Ironwood 2016) that map the extent of sand deposits in the Project area. In addition, three site-specific studies, Ironwood 2016 (Appendix M), Huffman-Broadway 2017 (Appendix N), and Kenney 2017 (Appendix O) were developed by the Applicant in support of the Project application. These reports have not been peer-reviewed or published in the scientific literature. Therefore, although BLM has considered their findings in its analysis of the potential impact of the Project on sand dunes, these are just a few of the many sources of information considered.

Description of the Regional Sand Corridor

The regional sand corridor is a complex, regional-scale network of sand dunes, oriented from northwest to southeast, stretching from the central Mojave Desert in the west to the Colorado River. In some areas, there are also dunes on the east side of the Colorado River, stretching into Arizona. Within this network, there are three specific linear features. The southern-most of the

systems is the Dale Lake-Palen-Ford dune system, also referred to as the Clark's Pass system by some authors (such as Zimbelman et al. 1995; Lancaster and Tchakerian 2003).

Several authors have studied sand transport, both regionally within southern California, and locally in the Ford-Palen area. A primary focus of these studies is the question of the source of the sand within the corridor. The two prevailing hypotheses are that the sand corridor operates as a transport corridor on a regional scale, and that the corridor is made up of an agglomeration of individual dune systems, disconnected from each other, and each sourced and operating on a local scale.

In the regional scale model advanced by Zimbelman et al. (1995), sand enters the corridor primarily through surface water erosion and deposition at its western upwind end, is blown along the flat surfaces, including playa lakebeds, in the valleys, then is pushed up sand ramps by saltation through low mountain passes, is deposited on the leeward side of the mountain passes, and then continues to be blown eastward. Zimbelman et al. (1995) describe the pathway for the sand dunes near the Project area to originate from Dale Playa at the eastern end of the Twentynine Palms Valley. From there, the sand climbed sand ramps through Clark's Pass, which is a gap between the Sheep Hole and Pinto Mountains. East of Clark's Pass, the sand entered Palen and Ford Playas. From there, the sand continued to travel eastward through Chuckwalla Valley, and thus entered the Palo Verde Mesa, where it ends directly within the Project area.

Zimbelman et al. (1995) noted that previous authors had assumed that the corridor was discontinuous, consisting of a series of deposits locally derived from the nearest playas. Based on their remote sensing and field observations, Zimbelman et al. (1995) hypothesized that the areas were connected, forming a "more through-going movement of windblown sand", and that they might be considered "rivers of sand". This hypothesis has formed the basis for much subsequent research, and is the basis for the potential concern that large-scale project development in one part of the corridor could have indirect impacts to sand-related resources in others parts of the corridor.

Lancaster and Tchakerian (1996) made a detailed study of the sediments in the sand ramps, including those in the Dale Lake-Palen-Ford system. They concluded that the sediments in the sand ramp component of the corridors consisted of a mixture of eolian, alluvial, and talus deposits.

In addition to the literature discussing the regional characteristics of the sand corridors, multiple site-specific studies support the hypothesis that the part of the corridor that overlies the Project area is not continuous. Although the Project area falls within the sand corridor shown in Figure D-15 of DRECP, multiple surface geology maps show that the bulk of the Project area is composed of alluvial deposits, and that active sand dunes occupy only a small portion of the site. The geologic map of the site in Figure 3.7-1 was derived from the U.S. Geological Survey (USGS) map of the region (Stone 2006). This map shows that eolian sand is present only in the northern gen-tie corridor of the Project area. The site-specific mapping by Ironwood (2016) shows that only the northern gen-tie corridor and two other small areas are mapped as sand dunes. Regional scale mapping of the eolian system in the East Riverside area was done by Lancaster (2014), in support of the DRECP. This map shows the corridor west of the Project area to be a complex mix of dune deposits, but the Project site itself is occupied mostly by alluvial deposits (Qoa) and dune deposits (Qye/Qal).

The report by Kenney (2017) postulates that most onsite sand sources are local, and that the sand corridor does not currently operate as a continuous river of moving sand. Kenney (2017) identified and mapped the sand sources for the local SMZs, and found that their sources were locally derived from surface water erosion in Wiley's Well Basin, the Mule Mountains, and the McCoy Mountains. Kenney (2017), based on his own research and citing California Geological Survey comments on the DRECP in 2015, posited that the use of the term "sand transport corridor" is misapplied because connectivity between individual sand dune areas may not exist.

Current Level of Activity

Several authors since 1995 have questioned whether the regional model of the formation of the corridor by Zimbelman et al. (1995) is accurate or, if it is accurate, whether it represents current conditions. In general, most researchers have continued to use the phrases "sand transport path" and "sand transport corridor" even while demonstrating that the corridors are largely inactive today. Neither Zimbelman et al. (1995) who initiated the hypothesis of "rivers of sand," nor Lancaster and Tchakerian (2003), nor any other researchers claim that the Dale Lake-Ford-Palen system is currently active as a continuous transport corridor. Although they do not specifically make a statement about the current level of activity, Zimbelman et al. (1995) use past tense words in describing the system, including statements such as sand ramps "allowed sand to exit the valley", the orientation of the mountains "acted like a funnel", and the sand "traversed the northern end of the Eagle Mountains."

Although Zimbelman et al. (1995) used the phrase "sand transport paths" and hypothesized that the system was continuous, they also acknowledged that the timing of sand transport along the path was episodic. They based this conclusion on the presence of multiple paleosols (relict soil profiles) present within the deposits. To form a soil profile, a sand deposit would need to be inactive and exposed on the surface for a substantial period of time. Therefore, the presence of such paleosols indicates that active sand deposition was punctuated by extended periods of inactivity.

Bach (1995) observed that dune mobility indices based on wind energy, precipitation, and evapotranspiration predicted that most dunes in the Mojave and Colorado Deserts should be active, while the observation was that most of the dunes were currently inactive.

Lancaster and Tchakerian (1996) specifically studied the sand ramps that were instrumental in allowing sand transport across topographic barriers in the model of Zimbelman et al. (1995), and stated that most sand ramps in the Mojave are relict features and are not currently accumulating sand. They stated that, with the exception of the western part of the Devil's Playground (an area not associated with the Dale Lake-Palen-Ford system), the sand transport corridors are "currently in a dormant or relict (inactive, vegetated) state".

Many studies of eolian deposits in the area concentrate on mapping dune systems and nearby alluvial deposits to establish both local and regional geologic timelines of dune activity. Lancaster and Tchakerian (2003) used mineral luminescence dating across several of the different sand systems to identify general periods of activity and inactivity on a regional basis. Their study included Dale Lake at the western end of the Dale Lake-Palen-Ford system (which they referred to as the Clark's Pass system), but did not include any areas further to the east in this system, including the Project area. Their main conclusion is that operation of the systems in the Mojave Desert is episodic, depending on sediment supply, availability, and mobility. Even

though Lancaster and Tchakerian (2003) refer to this system as a "sand transport corridor", they concluded this system was active between >35,000 years ago to 25,000 years ago, and then again from 15,000 to 10,000 years ago (Lancaster and Tchakerian 2003).

For the Project area and the Dale Lake-Palen-Ford dune systems, the conclusion that operation of the sand corridor is episodic is important in demonstrating that, even if the regional Dale Lake-Palen-Ford dune system operated as a continuous transport corridor in the past, it probably does not do so today.

Future Activity

Episodic activity of the sand deposits within the sand corridor indicates that it will eventually re-activate, and stable deposits will eventually expand to cover a larger area than they do at present. This will occur regardless of the magnitude or types of changes that may occur from future climate change. However, the timeframe in which this re-activation will occur, and the extent to which it will impact the Project area, are unknown. It is also unknown whether this re-activation will be the next phase of change to the corridor, or whether the corridor will become less active before entering a new period in which it is more active.

Potter and Weigand (2016) used remote sensing to study rates of dune migration in the Palen Dune field between 1985 and 2014. They observed that there was little change to the overall area of the sand accumulation zone, with the leading (southeastern) edge of the dune field shifting by less than 0.1 kilometers (about 300 feet) between 1995 and 2014. However, they observed that there were substantial changes in the level of activity within the zone. In 1984, much of the dune area was inactive, with active sand fields separated by scattered brush and desert grass cover. Between 1985 and 2014, active sand sheets that had been separate spread to cover areas that had been vegetated. Individual dunes migrated at rates up to 50 meters per year, and the area of active dunes expanded from 21.3 square kilometers (approximately 5,263 acres) to 34.12 square kilometers (approximately 8,430 acres), an increase of 60 percent. This suggests that inactive areas within dune fields can become active within the timeframe of the life of the DQSP Project.

Downwind Resources

The Project area is situated near the far eastern, downwind end of the Dale Lake-Palen-Ford system. Local-scale mapping suggests that the sand corridor feature may not actually extend to the edge of the Palo Verde Mesa, as is shown on Figure 3.3-2. Mapping by Stone (2006), Hayhurst and Bedrossian (2010), Lancaster (2014), Ironwood (2016), and Kenney (2017) shows that the eolian deposits largely dissipate as they approach the Project area from the west. These maps do not show eolian deposits on the eastern half of the site or further to the east. The Palo Verde Valley, the area between the Project and the Colorado River, may once have been the ultimate depository for sand transport in the Palen-Ford corridor. If so, any sand deposited in this valley would likely have been routinely reworked and transported downstream during floods on the river, or obscured by agricultural activity in the valley. Therefore, the Project area itself does not contribute sand to dunes located further eastward.

Onsite Sand Deposits

Eolian deposits in the Project area have been mapped on both a regional scale and local scale by five separate researchers, including Stone (2006), Hayhurst and Bedrossian (2010, a compilation

from previous sources), Ironwood (soils and vegetation mapped in 2012, but reported in the BRTR in 2016), Lancaster (2014), and Kenney (2017). A general correlation of the mapped units between these sources is shown in Table 3.3-2. The geologic map of the site shown in Figure 3.7-1 is based on Stone (2006), but all five studies are consistent in showing the Project area to be composed of a mixture of eolian and alluvial deposits. The maps also generally agree on the distribution of each type of deposit. These maps show that deposits dominated by eolian processes are found only in the western and northern edges of the Project area. Based on Kenney (2017), these deposits occupy only about 7.5 percent of the Project area. The remainder of the Project area is occupied by deposits dominated by alluvial processes.

Table 3.3-2. General Correlation Between Different Source Maps for Alluvial and Eolian Deposit Information

<table>
<tr><th>General Age</th><th>Deposit Type</th><th>Stone 2006</th><th>Hayhurst and Bedrossian 2010</th><th>Ironwood 2016</th><th colspan="2">Lancaster 2014</th><th colspan="2">Kenney 2017</th></tr>
<tr><td>Holocene</td><td>Eolian</td><td>Qs</td><td>Qe</td><td>Sand dune</td><td>Qe</td><td>Qye</td><td>Qe-ds</td><td>Qe-de</td></tr>
<tr><td>Holocene</td><td>Alluvial</td><td>Qa6 (100 to 2,000 years old)</td><td>Qf (late Holocene)</td><td rowspan="2">Sonoran Creosote bush scrub</td><td colspan="2">Qyf (late Pleistocene and Holocene)</td><td colspan="2" rowspan="2">Qal</td></tr>
<tr><td>Pleistocene</td><td>Alluvial</td><td>Qpv</td><td>Qot (old terrace deposits, late to middle Pleistocene)</td><td colspan="2">Qoa (Pleistocene)</td></tr>
</table>

Onsite Sand Sources

In addition to mapping eolian sand deposits, Kenney (2017) mapped areas that were identified as critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems, These areas are typically relatively flat ponding areas found at the ends of desert washes. Alluvial sands are deposited in these areas through stormwater erosion in the surrounding mountains. When the areas dry, the sand deposits are subject to wind erosion and transport to dune areas.

Detailed maps of the eolian deposits on the site are shown in Plates 3 and 6a of Kenney 2017 (Appendix O). The Palowalla SMZ is not specifically indicated on Plate 6a, but Plate 3a shows that it is associated with the light blue area surrounding the west wide of the NRG Blythe PV Project (identified as "Blythe 21 Solar Facility" on the Plate). This area is referred to as a ponding area by Kenney (2017), and the limits of the area were mapped by Huffman-Broadway (2017) using ponding indicators such as desiccation cracks. This ponding area is also mapped as the *Parkinsonia florida-Olneya tesota* alliance by BLM in Figure 3.3-2, and as the FP1 active watercourse, a state jurisdictional water, in Huffman-Broadway (2017). The Palowalla SMZ is known to be currently active, having been formed within the past 150 years as a result of diversion of stormwater flow from the McCoy Mountains underneath Interstate 10. The drainage ends at this ponding area, which itself has been modified in recent years by the construction of the NRG Blythe PV Project (Kenney 2017).

3.3.1.3 Special-Status Plants

Special-status plants are those species that have been afforded special recognition by Federal, state, or local resource agencies or organizations. Special-status species are of relatively limited distribution and typically require unique habitat conditions. For the purposes of this Draft PA/EIS/EIR, special-status plant species are defined as meeting one or more of the following criteria:

1. Listed as threatened or endangered or candidates for future listing as threatened or endangered under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA);
2. Designated as BLM Sensitive; or
3. For non-BLM lands, considered by the CNPS to be "rare, threatened, or endangered in California" (CNPS Rank 1A, 1B, and 2) as well as CNPS Rank 3 and 4 plant species.

A list of 33 special-status plant species with potential to occur within the vicinity of the Study Area was generated by searching multiple databases and reference sources for occurrence records. Rare plant surveys were conducted on BLM lands in Fall 2012 (September 11 to 19, 2012), Spring 2013 (March 18 to 30, 2013), and Spring 2017 (May 9 to 14, 2017), and on the private inholding in Spring 2015 (March 10 to 12, 2015). Localized winter rainfall for each rare plant survey was sufficient to germinate abundant annual blooms, and timing was optimal for observing and identifying all potentially occurring target plants.

Six of the 33 special-status plant species were documented during rare plant surveys conducted between Fall 2012 and Spring 2015 (Table 3.3-3; Figure 3.3-3). These include Harwood's milkvetch (*Astragalus insularis var. harwoodii*), Abrams' spurge (*Euphorbia abramsiana*), Utah vine milkweed (*Funastrum utahense*), ribbed cryptantha (*Cryptantha costata*), Harwood's eriastrum (*Eriastrum harwoodii*), and desert unicorn-plant (*Proboscidea altheifolia*). None of these special-status plant species are Federally- or state-listed under FESA or CESA. Harwood's eriastrum is designated as BLM Sensitive. Special-status species documented within the Study Area are described further below.

Table 3.3-3. Special-Status Plant Species Evaluated for Potential Occurrence within the Study Area

Common Name	Scientific Name	Status (State/Federal/BLM/CNPS)[a]	Potential for Occurrence within Study Area
Chaparral sand verbena	*Abronia villosa var. aurita*	-/-/BLM Sensitive/1B.1	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Angel trumpets	*Acleisanthes longiflora*	-/-/-/2B.3	**ABSENT**. No suitable habitat onsite (rocky carbonate canyon bottoms).
Harwood's milk-vetch	*Astragalus insularis var. harwoodii*	-/-/-/2B.2	**PRESENT**. 26,370 individuals estimated on site.
Borrego milk-vetch	*Astragalus lentiginosus var. borreganus*	-/-/-/4.3	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Coachella Valley milk-vetch	*Astragalus lentiginosus var. coachellae*	-/FE/-/1B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Gravel milk-vetch	*Astragalus sabulonum*	-/-/-/2B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Pink fairy duster	*Calliandra eriophylla*	-/-/-/2B.3	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Saguaro	*Carnegia gigantean*	-/-/-/2.B.2	**PRESUMED ABSENT**. Not found during surveys, little potential habitat on site.
Emory's crucifixion thorn	*Castela emoryi*	-/-/-/2B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Abrams' spurge	*Chamaesyce abramsiana*	-/-/-/2B.2	**PRESENT**. 2,104 individuals estimated on site.
Parry's spurge	*Chamaesyce parryi*	-/-/-/2B.3	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Flat-seeded spurge	*Chamaesyce platysperma*	-/-/BLM Sensitive/1B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys. No predicted occupied habitat present onsite in DRECP model.
Las Animas colubrina	*Colubrina californica*	-/-/-/2B.3	**ABSENT**. Not found during surveys; no potential habitat on site (rocky wash bottoms & margins).
Foxtail cactus	*Coryphantha alversonii*	-/-/-/4.3	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Ribbed cryptantha	*Cryptantha costata*	-/-/-/4.3	**PRESENT**. 64,234 individuals estimated on site.
Glandular ditaxis	*Ditaxis claryana*	-/-/-/2B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
California ditaxis	*Ditaxis serrata var. californica*	-/-/-/3.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.

Table 3.3-3. Special-Status Plant Species Evaluated for Potential Occurrence within the Study Area

Common Name	Scientific Name	Status (State/Federal/BLM/CNPS)[a]	Potential for Occurrence within Study Area
Harwood's eriastrum	*Eriastrum harwoodii*	-/-/BLM Sensitive/1B.2	**PRESENT**. 956 individuals estimated on site. Predicted occupied habitat present onsite in DRECP model.
Utah vine milkweed	*Funastrum utahense*	-/-/-/4.2	**PRESENT**. 1 individual found on site.
Algodones Dunes sunflower	*Helianthus niveus ssp. Tephrodes*	SE/-/BLM Sensitive/1B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
California satintail	*Imperata brevifolia*	-/-/BLM Sensitive/2B.1	**ABSENT**. No suitable habitat on site (moist river plains and canal margins).
Bitter hymenoxys	*Hymenoxys odorata*	-/-/-BLM Sensitive/2B.1	**ABSENT**. No suitable habitat on site (moist river margins and benches).
Crown-of-Thorns	*Koeberlinia spinosa ssp. Tennuispina*	-/-/-/2B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Graham's fishhook cactus	*Mammillaria grahamii var. grahamii*	-/-/-/2B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Darlington's blazing star	*Mentzelia puberula*	-/-/-/2B.2	**ABSENT**. No potential habitat present on site (rocky limestone and granite slopes).
Wiggins' cholla	*Opuntia wigginsii*	-/-/-/3.3	**PRESUMED ABSENT**. Potential habitat occurs on site but not found during surveys.
Desert beardtongue	*Penstemon pseudospectabilis ssp. Speudospectabilis*	-/-/-/2B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys
Lobed ground cherry	*Physalis lobata*	-/-/-/2B.3	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Desert portulaca	*Portulaca halimoides*	-/-/-/4.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Desert unicorn-plant	*Proboscidea althaeifolia*	-/-/-/4.3	**PRESENT**. 811 individuals estimated on site.
Dwarf germander	*Teucrium cubense ssp. depressum*	-/-/-/2B.2	**PRESUMED ABSENT**. Marginal habitat present on site but not found during surveys.
Jackass clover	*Wislizenia refracta ssp. refracta*	-/-/-/2B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.
Palmer's jackass clover	*Wislizenia refracta ssp. palmeri*	-/-/-/2B.2	**PRESUMED ABSENT**. Potential habitat present on site but not found during surveys.

Table 3.3-3. Special-Status Plant Species Evaluated for Potential Occurrence within the Study Area

Common Name	Scientific Name	Status (State/Federal/BLM/CNPS)[a]	Potential for Occurrence within Study Area

[a] **Status Codes:**

Federal

FE = Federally listed, endangered: species in danger of extinction throughout a significant portion of its range
FT = Federally listed, threatened: species likely to become endangered within the foreseeable future

State

SE = State listed as endangered
ST = State listed as threatened
R = State characterized as rare

BLM

BLM Sensitive = Species that require special management consideration to avoid potential future listing under the FESA and that have been identified in accordance with procedures set forth in BLM Manual section 6840 (BLM 2008).

CNPS

California Rare Plant Rank (CRPR):
1A = Includes plants that are both presumed extirpated in California and either rare or extinct elsewhere
1B = Rare, threatened, or endangered in California and elsewhere
2A = Plants presumed extirpated in California but more common elsewhere
2B = Plants rare, threatened, or endangered in California, but more common elsewhere
3 = Plants which need more information
4 = Limited distribution – a watch list
Threat Ranks (follows a CRPR, where applicable):
0.1 = Seriously threatened in California (high degree/immediacy of threat)
0.2 = Fairly threatened in California (moderate degree/immediacy of threat)
0.3 = Not very threatened in California (low degree/immediacy of threats or no current threats known)

Harwood's Milkvetch

Background

Harwood's milkvetch is an annual herb in the Fabaceae with a CNPS Rank of 2B.2. It is known to occur in desert dunes and Mojavean and Sonoran desert scrub at elevations ranging from 0 to 2,300 feet amsl. Its mechanism for dispersal is unknown, but most likely its inflated seed pods get carried by the stiff westerly winds and deposited at some wind-breaking disturbance such as soil berms. According to the CNDDB, there are 39 records of Harwood's milkvetch within five miles of the Project site, and two occurrences that were recorded on the Project site prior to the rare plant surveys that were conducted in 2013 (CDFW 2016).

Survey Results

Large populations of Harwood's milkvetch were documented within the proposed solar facility during Spring 2013 rare plant surveys (Figure 3.3-4). The total estimated count during Spring 2013 surveys was 13,712 individuals. The species was distributed widely across most of the southern half of the Study Area, with concentrated populations along the disturbed berm surrounding the private inholding and some very shallow sand dunes and sand sheets at the southwest corner of the Study Area. The majority of the plants were in fertile condition, often both flowering and fruiting and there appeared to be a robust fruit and seed set in Spring 2013.

Harwood's milkvetch was also found distributed widely across the entire 160-acre private inholding during Sprint 2015 rare plant surveys, with 26,370 individuals found (Figure 3.3-4). The inholding, being a fallow jojoba farm, supports a regular grid of shallow mounds and berms, providing micro-breaks in the flow of wind. Thus, there are opportunities for milkvetch seedpods to drop and accumulate anywhere within the inholding, leading to the large numbers of individuals counted during the survey. The linear distribution of Harwood's milkvetch waypoints as depicted on Figure 3.3-4 is an artifact of the mapping protocol. Actual distribution of this plant was patchy and evenly dispersed across the entire inholding with no evident pattern visually observed, except for its accumulation at breaks in the terrain from artificial berms. The species appears sometimes to profit from re-contouring the native terrain.

Abrams' Spurge

Background

Abrams' spurge is annual herb in the Euphorbiaceae with a CNPS Rank of 2B.2. It is known to occur in Mojavean desert scrub, playas, and sandy/silty Sonoran desert scrubs at elevations ranging from sea level to 3,000 feet amsl. Recent surveys on the nearby MSEP have yielded over 4,000 individuals, and reports of populations in the "tens of thousands" have been observed on Ford Dry Lake and Hayfields Dry Lake (Karl, Pers. comm. 2012). According to the CNDDB, there are 16 records of Abrams' spurge within five miles of the Project site (CDFW 2016).

Survey Results

Abrams' spurge was documented as a few small occurrences and one large population during the Fall 2012 rare plant surveys (Figure 3.3-5). The total number of individuals was estimated to be approximately 2,104. The majority of these individuals exist as depauperate dwarf plants on a

cracked-muddy flat at the southwest border of the Study Area. This species was not documented on the 160-acre private inholding during Spring 2015 rare plant surveys.

Utah Vine Milkweed

Background

Utah vine milkweed is a perennial herb in the Apocynaceae with a CNPS Rank of 4.2. It typically grows along wash margins and in sandy/gravelly areas throughout the Sonoran and Mojave deserts of California, sprawling and clambering over common shrubs for support. Flowering from April to September, its elevation range is 300 to 4,700 feet amsl.

The species was documented within the region during rare plant surveys conducted for nearby solar projects. Approximately 5,180 individuals were documented on the MSEP site while 398 were documented on the Modified Blythe Solar Power Project (Modified BSPP) site.

Survey Results

One small individual of Utah vine milkweed was observed within the Study Area during the Spring 2013 rare plant survey (Figure 3.3-6). This individual was located near the northern most border of the Study Area in a shallow runnel margin. This is an insignificant occurrence, especially with respect to large distributed populations found elsewhere in the vicinity of the Study Area (e.g., 5,180 individuals documented on the MSEP site and 398 individuals documented on the Modified BSPP site).

Ribbed Cryptantha

Background

Ribbed cryptantha is an annual herb in the Boraginaceae with CNPS Rank of 4.3. It occurs on fine sandy soil and shallow dunes within Sonoran and Mojavean creosote bush scrub, at an elevation range below 3,200 feet amsl. Flowering from January through May, it has been widely documented from California herbarium records, with several occurrences (including a reference population) within approximately 5 miles of the Study Area.

The species was documented within the region during rare plant surveys conducted for nearby solar projects. Approximately 1,715 individuals were documented on the MSEP site while 71,000 were documented on the Modified BSPP site.

Survey Results

Spring 2013 rare plant surveys documented approximately 64,234 individuals of ribbed cryptantha, exclusively on sandy areas of the Study Area. Some occurrences were so dense that the numbers of individuals were estimated systematically. Very dense populations were recorded along the gen-tie line and on sandy areas southwest of the exiting solar facility (Figure 3.3-7).

Two individuals of ribbed cryptantha were found during Spring 2015 rare plant surveys on the 160-acre private inholding (Figure 3.3-7). Both appear to be waifs and it is unlikely that they would promote establishment of larger populations on the inholding. This occurrence is insignificant when compared to the approximately 56,000 individuals found on deeper sandy areas of the Study Area.

Harwood's Eriastrum

Background

Harwood's eriastrum is an annual herb in the Polemoniaceae with a CNPS Rank of 1B.2. Harwood's eriastrum is also a BLM Sensitive species. The species is endemic to California, being distributed on sand dunes in desert areas of Riverside, San Bernardino, and San Diego counties. Typically flowering occurs from March to May, its elevation range is 400 to 3,000 feet amsl.

The species was documented within the region during rare plant surveys conducted for nearby solar projects. Approximately 386 individuals were documented on the MSEP site approximately 7 miles north of the Project, while 2,134 were documented on the Modified BSPP site approximately 5 miles north of the Project. According to the CNDDB, there are 14 records of Harwood's eriastrum within five miles of the Project site, and one occurrence that was recorded on the Project site prior to the rare plant surveys that were conducted in 2013 (CDFW 2016). There is predicted occupied habitat present onsite in the DRECP suitable habitat model.

Survey Results

Figure 3.3-8 shows the occurrences of Harwood's eriastrum identified in the Project area during the planning and analysis of the Project. This includes occurrences reported to the California Natural Diversity Database (CNDDB) in 2010 and 2011, and occurrences identified in onsite surveys in 2013 and 2017.

Rare plant surveys for the Harwood's eriastrum, on 10 meter spacing, were conducted on the BLM portion of the Project area in Spring 2013. The results of these surveys documented 882 Harwood's eriastrum individuals within the Study Area; all were found exclusively on sandy areas of the gen-tie line and solar array area. Harwood's eriastrum appears to co-occur sympatrically with ribbed cryptantha, with similar substrate preferences and distribution, although in fewer numbers and more sporadically dispersed (Ironwood 2016).

Additional surveys, also on 10 meter spacing, were conducted on the private land parcel in Spring 2015. No occurrences were found (Ironwood 2016).

Although 2013 and 2015 had slightly higher than average rainfall, even higher rainfall in the winter of 2016/2017 prompted additional surveys in Spring 2017 (WEST 2018). These surveys did not include the areas in which the species had been detected in 2013. Surveys were conducted at 60 meter spacing to identify suitable habitat. In locations where suitable habitat occurred, more detailed surveys were conducted at 10 meters spacing. The 2017 surveys identified occurrences in two locations in which the species had not been identified in 2013. One of these was a single individual in the central portion of the Project site, in a small sand deposit on the downwind side of a creosote bush. This single occurrence is located more than 0.5 miles from any other occurrences of the species. The second location was an occurrence of 73 individuals on sand dunes near the CRSS.

The entire Project area is included within the DRECP suitable habitat model for the species.

Desert Unicorn-Plant

Background

Desert unicorn-plant is a perennial herb in the Martyniaceae with a CNPS Rank of 4.3. It is historically known to occur in sandy Sonoran desert scrub at elevations ranging from 490 to 3,280 feet amsl.

The species was documented within the region during rare plant surveys conducted for nearby solar projects. Approximately 662 individuals were documented on the MSEP site while 1,687 were documented on the Modified BSPP site.

Survey Results

Approximately 811 individuals of desert unicorn-plant were documented during Fall 2012 rare plant surveys within the Study Area (Figure 3.3-9). The number of individuals is an estimate because sometimes a single root tuber might produce two to three above ground leaf rosettes, and closely spaced aboveground stems were counted as separate individuals. The species' distribution was found occasionally on shallow sand sheets, but was mostly seen in creosote bush scrub, on both loose sandy-gravelly soils, and silt deposit areas. It prefers shallow swales where summer monsoonal rainfall collects and soaks the soil. The largest concentrations of this plant were the silty outwash flats on the southwest border of the site, and on similar silt deposit areas near the existing solar facility.

3.3.1.4 Jurisdictional Waters and Wetlands

Field investigations were conducted to determine the extent of state jurisdictional waters and wetlands within the ROW application area during the spring of 2014 and fall of 2015 (Huffman-Broadway Group 2017). Investigations for Federal jurisdictional waters and wetlands were conducted during the spring of 2014 and 2015 (Huffman-Broadway Group 2015).

The state delineation identified the presence of areas potentially subject to CDFW jurisdiction under the Department's Lake and Streambed Alteration Agreement Program (California Fish and Game Code (FGC) Sections 1600-1616). The areas are shown on Figure 4.3-1, along with the overlap of the areas with the different alternative footprints. These areas are primarily on the northern extent of the Study Area, north of the sand dune area, and in the northeastern corner of the Study Area, immediately south of the existing NRG Blythe PV Power Plant. The acreage of the areas is presented in Table 3.3-4. The floodplain area, designated as FP1 is situated at the end of Palowalla Ditch, roughly corresponds to the *Parkinsonia florida-Olneya tesota* vegetation alliance mapped by BLM, and as a ponding area that is critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems by Kenney (2017). Specific impacts to this area are discussed in Section 4.3.1.1.

Table 3.3-4. Summary of CDFW Jurisdictional Watercourses in Study Area[1]

Type of Watercourse	Linear Distance in Study Area	Acres in Study Area
Active Channel	5,744 ft	0.13
Dormant Channel	6,778 ft	0.16
Abandoned Channel[2]	45,189 ft	1.04

Table 3.3-4. Summary of CDFW Jurisdictional Watercourses in Study Area[1]

Type of Watercourse	Linear Distance in Study Area	Acres in Study Area
Active Floodplain[3]	NA	Watercourse FP1 – 34.14 acres
		Watercourse FP2 – 32.32 acres
		Watercourse FP3 – 0.51 acres
		Subtotal - 66.98
Total	57,711 ft	68.31

1 – Study Area is defined as the potential development area, plus a buffer of 300 feet. The specific acreage of each type of watercourse that may be impacted is presented in Table 4.3-2.

2 – Abandoned channels are considered to be potentially under CDFW jurisdiction at this time. A final determination of jurisdiction will be made by CDFW through the Streambed Alteration Permit process.

3 - Active floodplains are identified in Huffman-Broadway 2017 with the designation "FP".

The Federal jurisdictional delineation guidelines, based on the USACE and U.S. Environmental Protection Agency guidance, determined the potential waters of the U.S. within the Study Area totaled 41,932 linear feet of either ephemeral riverine intermittent streambed (40,349 linear feet) or excavated ephemeral riverine intermittent streambed (1,583 linear feet). Of these potential Federal waters, none were categorized as streambeds subject to Section 10 of the Rivers and Harbors Act of 1899. Additionally, all of the 41,932 linear feet of potential Federal waters were determined by the Corps to be intrastate isolated waters with no apparent interstate or foreign commerce connection, and are therefore excluded from Clean Water Act jurisdiction.

3.3.1.5 Cacti

Systematic sampling of succulents (cacti) was conducted during Fall 2012 rare plant surveys. Yuccas were not found on site, but three species of cactus were documented within the Study Area. The cacti were not recorded with GPS waypoints or in the electronic database; however, they were tallied and represent a good census of all cacti onsite. No cacti were observed on the inholding. The estimated totals of all cacti found on site are as follows:

- silver cholla (*Cylindropuntia echinocarpa*): 106 individuals;
- common fish hook cactus (*Mammillaria tetrancistra*): 11 individuals; and
- barrel cactus (*Ferocactus cylindraceus*): 1 individual.

3.3.1.6 Invasive Weeds

Invasive weeds are defined as species of nonnative plants that are included on the California Invasive Plant Council's (CAL-IPC) list of invasive species for the Mojave Desert, have a rating of High or Moderate (CAL-IPC 2015) and are included on the United States Department of Agriculture (USDA) database of Federal Noxious Weeds (USDA 2015a), the USDA California state-listed Noxious Weeds (USDA 2015b), California Department of Food and Agriculture's (CDFA) Noxious Weed List (CDFA 2015), and the BLM National List of Invasive Weed Species of Concern (BLM 2008). Weeds are commonly categorized as either noxious, invasive, or both. The differences in definition lie in both legislative- and action-oriented considerations.

Invasive weeds are of particular concern in wildlands because of their potential to degrade habitat and disrupt the ecological functions of an area (Cal-IPC 2006). Specifically, noxious and invasive weeds can alter habitat structure, increase fire frequency and intensity, decrease forage (including for special-status species, such as Mojave desert tortoise), exclude native plants, and decrease water availability for both native plants and animals. Soil disturbance and gathering and channeling water create conditions favorable to the introduction of new noxious and invasive weeds or the spread of existing populations. Construction equipment, fill, and mulch can act as vectors introducing noxious and invasive weeds into an area.

Per the Project's IWMP, there are six target invasive weed species observed on the Study Area during rare plant surveys (Table 3.3-5). Each of these species is described further below. Four additional nonnative plants, including lamb's quarters, nettleleaf goosefoot, prostate knotweed, and puncture vine, were scarce in occurrence on the Project site and have low invasive potential, and thus, are not considered target invasive weed species on the Project site.

Table 3.3-5. Target Invasive Weeds Documented in the Study Area

Common Name	Scientific Name	Abundance in the Study Area	BLM Risk Rating
Sahara mustard	*Brassica tournefortii*	Widespread, locally abundant on sand	Highly invasive
Bermuda grass	*Cynodon dactylon*	Scarce	Low
Eucalyptus	*Eucalyptus* sp.	Scarce	Low
Russian thistle	*Salsola tragus*	Abundant on sand	Moderate
Mediterranean grass	*Schismus barbatus*	Widespread	Moderate
Tamarisk	*Tamarix ramosissima*	Scarce	Low

Sahara mustard is the most aggressive and abundant invasive plant within the Study Area. It is diffusely distributed throughout the Study Area on many habitats, and locally abundant throughout the sandier areas of the Study Area (e.g., along the gen-tie line). Millions of individuals were observed flowering and fruiting during the Spring 2013 rare plant survey. This species spreads easily, and its degree of invasiveness has been listed as 'high' by Cal-IPC. Its BLM risk rating for spread on the Project site is considered high. Minimal winter rains can germinate multiple leaf rosettes, many of which can bolt and produce seed in a short time. Potential for Sahara mustard to expand its presence across other less sandy areas of the site remains high, especially if aided by soil surface disturbance.

Figure 3.3-10 shows the heaviest infestations of Sahara mustard on the site. Although it generally invades sandy areas, the surveyors noticed that it is most abundant along the shallow margins and skirts of the major dune systems on the west portion of the Study Area. It also dominates shallow sand sheets elsewhere, as well as certain sand accumulations adjacent to abandoned agriculture fields.

Sahara mustard had very little presence on the 160-acre private inholding. This goes against the common association of disturbed areas becoming breeding grounds for weeds. In fact, both of the main agricultural fields seemed to support very few invasive weeds at all.

Russian thistle (*Salsola tragus*) was observed mostly on the gen-tie line sand dune areas, with occasional small occurrences across disturbed areas of the site. This plant represents the second

most common weed onsite after Sahara mustard. Occasional locally abundant populations are to be expected associated with soil disturbance and loose sand. This species is considered limited in its degree of invasiveness by Cal-IPC, and it is considered a noxious weed by the California Department of Food and Agriculture (CDFA 2011). Its BLM risk rating for spread on the Project site is considered moderate.

Mediterranean grass (*Schismus barbatus*) is widespread across the site (including the 160-acre private inholding) in many habitats but never "abundant." This plant is so widespread across many California deserts that it has become the dominant annual grass in many situations. Although it is very common, it poses only a slight ecological type conversion risk in this locally harsh situation. This species is considered limited in its degree of invasiveness by Cal-IPC. Its BLM risk rating for spread on the Project site is considered moderate.

Bermuda grass (*Cynodon dactylon*) was observed in the *Parkinsonia florida-Olneya tesota* alliance along the northern part of the site adjacent to an existing solar facility. Two small patches were seen growing in the shade of ironwoods. They were in robust condition, flowering and fruiting. It occurs as a weed in disturbed areas throughout California at elevations below 3,000 feet, and is considered moderately invasive by Cal-IPC. Due to the conditions on the Project site, its BLM risk rating for spread on the Project site is considered low.

Eucalyptus (*Eucalyptus* sp.) occurs only as a couple of planted individuals on the north margin of the site on the border of an existing solar facility. Its potential for invasiveness is low due to the harsh conditions of the local landscape.

Tamarisk (*Tamarix ramosissima*) occurs as only a couple of dwarfed individuals on the north margin of the site at the border of the existing solar facility. This species spreads easily in riparian areas and lake margins with perennial water supply, and its degree of invasiveness has been listed as 'high' by Cal-IPC. Furthermore, it is considered a noxious weed by the California Department of Food and Agriculture (CDFA 2011). Its BLM risk rating for spread on the Project site is considered low. However, the risk rating could differ if the Project were to introduce ponds.

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3.4 Biological Resources – Wildlife

This section describes the environmental setting relevant to wildlife resources and special-status wildlife species that are present within and surrounding the Project area. It also lists the special-status wildlife species that have potential to occur but that were not observed during focused wildlife surveys. This section is based, in part, upon information from these sources:

1. Biological Resources Technical Report (Ironwood 2016, provided in Appendix M);
2. California Natural Diversity Database (CDFW 2016);
3. Northern and Eastern Colorado Desert Coordinated Management Plan (NECO Plan Amendment to the CDCA Plan) (BLM 2002); and
4. BLM Special Status Animal Species by Field Office (BLM 2014).

Generally, the Study Area for wildlife resources included a 5,045-acre area consisting of public lands administered by the BLM (4,885 acres) and private land under the land use jurisdiction of Riverside County (160 acres). The privately-owned portion of the Study Area is generally referred to herein as the "160-acre private inholding." In some instances species-specific survey protocols required survey buffers, resulting in a larger Study Area (e.g., golden eagle and bat surveys). Survey buffers are discussed where necessary under species-specific discussions.

3.4.1 Environmental Setting

The Study Area supports a variety of desert-adapted wildlife that use the vegetation alliances described in Section 3.3, *Biological Resources - Vegetation*. Wildlife observed within the Study Area during biological surveys was representative of the western Sonoran Desert. Bird species documented during surveys, listed in order of most-to-least frequently observed, included black-throated sparrow (*Amphispiza bilineata*), horned lark (*Eremophila alpestris*), common raven (*Corvus corax*), Brewer's sparrow (*Spizella breweri*), white-crowned sparrow (*Zonotrichia leucophrys*), house finch (*Carpodacus mexicanus*), and ash-throated flycatcher (*Myiarchus cinerascens*). Brewer's sparrow and White-crowned Sparrow are passing migrants and winter residents only. Reptile species documented during surveys included Mojave fringe-toed lizard (*Uma scoparia*), Great Basin whiptail (*Cnemidophorus tigris*), side-blotched lizard (*Uta stansburiana*), zebra-tailed lizard (*Callisaurus draconoides*), desert iguana (*Dipsosaurus dorsalis*), and desert horned lizard (*Phrynosoma platyrhinos*). Six Mojave desert tortoise carcasses and one set of tortoise tracks were also observed on the Project site. Small mammal trapping documented the desert kangaroo rat (*Dipodomys deserti*), Merriam's kangaroo rat (*Dipodomys merriami*), desert woodrat (*Neotoma lepida*), Pacific pocket mouse (*Perognathus longimembris*), pocket mouse (*Chaetodipus spp.*), southern grasshopper mouse (*Onychomys torridus*), and round-tailed ground squirrel (*Spermophilus tereticaudus*). Species of amphibians and fish were not detected within the Study Area. Potential habitat for desert amphibian species (Couch's spadefoot toad) exists in the Study Area.

The Study Area is not located within any ACECs, Desert Tortoise ACECs, BLM wilderness areas, or USFWS-designated critical habitat. The Mule Mountains ACEC, which was established to manage prehistoric resources, is located less than one mile west of the Study Area. The Chuckwalla Desert Tortoise ACEC for Mojave desert tortoise is located approximately five

miles west of the Study Area. The Chuckwalla Unit of Mojave desert tortoise critical habitat is approximately 15 miles west of the Study Area.

The NECO Plan Amendment to the CDCA Plan addresses conservation of the bighorn sheep through the designation of Bighorn Sheep Wildlife Habitat Management Areas (WHMAs). The McCoy Mountains WHMA is located approximately 0.5-mile north of the Study Area's ROW Boundary, immediately north of Interstate 10, and the Mule Mountains WHMA is located approximately 0.9-mile southwest of the Study Area's ROW Boundary. These two WHMAs (shown in Figure 3.4-10) are currently listed as unoccupied range (BLM 2002). Lastly, a Herd Management Area (HMA) for burros is located approximately five miles south of the Study Area.

3.4.1.1 Special-Status Wildlife Species

Special-status wildlife species are those afforded special recognition by Federal, state, or local resource agencies or organizations. Special-status wildlife species have relatively limited distribution and typically require unique habitat conditions. For the purposes of this Draft PA/EIS/EIR, special-status wildlife species are defined as meeting one or more of the following criteria:

1. Listed as threatened or endangered or candidates for future listing as threatened or endangered under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA);
2. Protected by the Bald and Golden Eagle Protection Act (BGEPA);
3. Designated as BLM Sensitive;
4. Designated by CDFW as a Species of Special Concern (SSC);
5. Designated as a Fully Protected Species per FGC Sections 3511, 4700, 5050, and 5515; or
6. Protected under FGC Section 4000 (fur-bearing mammals).

A list of 29 special-status wildlife species meeting the criteria above and with potential to occur within the vicinity of the Study Area was generated by searching multiple databases and reference sources for occurrence records, including the following:

- U.S. Fish and Wildlife Service Information for Planning and Conservation (IPaC, online at https://ecos.fws.gov/ipac/);
- California Natural Diversity Database (CNDDB);
- California Wildlife Habitat Relationship System (CWHRS, online at *http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx*); and
- DRECP modeled suitable habitat layers.

Sixteen of these 29 special-status wildlife species or their sign were observed during Project-specific surveys performed between Fall 2012 and Spring 2015 (Table 3.4-1). Avian species solely protected by the Migratory Bird Treaty Act (MBTA) and FGC Sections 3503, 3503.5, and 3513 are excluded from Table 3.4-1 given that these regulations afford protection to most avian species occurring naturally in North America. While excluded from Table 3.4-1, avian-specific

surveys were conducted to determine presence and evaluate risks to all migratory birds and raptors.

Special-status species exclude wild horses and burros. While these species are protected under the Wild Free-Roaming Horse and Burro Act, they are not generally considered special-status wildlife species given that they are introduced species to North America and are afforded protection primarily given their historic relevance in the western U.S. The potential presence of wild horses and burros is discussed further in Section 3.4.1.2.

Special-status wildlife species detected during Project-specific surveys are discussed further below. Species for which evidence of occurrence was detected and those likely to occur are also discussed. Generally, special-status wildlife species for which species-specific surveys were performed are discussed separately whereas discussions of some special-status species detected during general inventories (i.e., migratory birds and bats) are grouped.

Table 3.4-1. Special-Status Wildlife Species Evaluated for Potential Occurrence within the Study Area

Common Name	Scientific Name	Status (State/Federal/BLM)[a]	Potential for Occurrence within Study Area
Amphibians			
Couch's spadefoot toad	*Scaphiopus couchii*	SSC/-/BLM Sensitive	**LOW POTENTIAL.** No Couch's spadefoot individuals were observed during surveys conducted between 2008 and 2013. However, two locations identified as likely to support were identified, and were inspected after heavy rains from 2008 to 2013. These areas were found to not hold water for a period of 8 days. Surveys of the CRSS for other projects identified the species in that area. Predicted occupied habitat present on a portion of the site in DRECP model.
Reptiles			
Mojave (Agassiz's) Desert tortoise	*Gopherus agassizii*	ST/FT/-	**PRESENT – Resident (low numbers)**. Study Area is located within BLM Category III Mojave desert tortoise habitat. Six carcasses and one set of fresh tracks found in Study Area during focused surveys. One live adult female Mojave desert tortoise was observed within the buffer area during avian surveys. Predicted occupied habitat present onsite in DRECP model.
Mojave fringe-toed lizard	*Uma scoparia*	SSC/-/BLM Sensitive	**PRESENT – Resident**. Presence confirmed during herpetofaunal surveys. Approximately 241 individuals observed in areas supporting fine sand or sandy loam soils. Predicted occupied habitat present onsite in DRECP model.
Birds			
Cooper's hawk	*Accipiter cooperi*	SSC/-/-	**PRESENT - Foraging.** Observed foraging during Fall 2013 and Spring/Fall 2014 surveys. Nesting habitat limited. May forage year-round.
Western burrowing owl	*Athene cunicularia hypugaea*	SSC/-/BLM Sensitive	**PRESENT – Resident**. Observed during focused surveys. Predicted occupied habitat present onsite in DRECP model.
Elf owl	*Micrathene whitneyi*	SE/-/BLM Sensitive	**ABSENT**. Suitable habitat was not present.in the Study Area or surrounding 1-mile. No predicted occupied habitat present onsite in DRECP model.
Golden eagle	*Aquila chrysaetos*	CFP/BGEPA/BLM Sensitive	**MODERATE POTENTIAL – Foraging**. Observed within 10-mile survey buffer. Nesting habitat is absent from Project Site but nests and active territories potentially located within 10-mile buffer. One nest occurrence is identified within the 10-mile radius, in the McCoy Mountains, in the DRECP. No predicted occupied habitat present onsite in DRECP model.
Ferruginous hawk	*Buteo regalis*	-/-/BLM Sensitive	**PRESENT – Foraging/Migration**. Nesting habitat absent. May use site vicinity for overwintering. No predicted occupied habitat present onsite in DRECP model.
Swainson's hawk	*Buteo swainsoni*	ST/-/-	**PRESENT – Foraging/Migration**. Nesting habitat absent. May be present (foraging) during summer and during fall migration.

Table 3.4-1. Special-Status Wildlife Species Evaluated for Potential Occurrence within the Study Area

Common Name	Scientific Name	Status (State/Federal/BLM)[a]	Potential for Occurrence within Study Area
Vaux's swift	*Chaetura vauxi*	SSC/-/-	**PRESENT – Foraging/Migration.** Nesting habitat absent. May be present (foraging) during summer and fall prior to migration.
Western snowy plover	*Charadrius alexandrines nivosus*	SSC/FT/-	**LOW POTENTIAL – Migration**. Nesting habitat not present. May be a rare migrant vagrant to the area if ephemeral water is present
Northern harrier	*Circus cyaneus*	SSC/-/-	**PRESENT –Resident/Migration**. Nesting habitat limited in agricultural settings nearby. May use site vicinity for overwintering.
Peregrine falcon	*Falco peregrinus anatum*	CFP/-/-	**MODERATE POTENTIAL – Foraging/Migration**. Nesting habitat absent from vicinity of Study Area. May occur (foraging) during migration.
Loggerhead shrike	*Lanius ludovicianus*	SSC/-/-	**PRESENT – Resident**. Nesting habitat present. Many individuals observed within the Study Area.
Vermilion flycatcher	*Pyrocephalus rubinus*	SSC/-/-	**LOW POTENTIAL – Resident/Foraging**. Nesting habitat limited. May be present (foraging) year-round.
Bendire's thrasher	*Toxostoma bendirei*	SSC/-/BLM Sensitive	**LOW POTENTIAL – Resident**. Nesting habitat present.
Crissal thrasher	*Toxostoma crissale*	SSC/-/-	**LOW POTENTIAL – Resident**. Nesting habitat present.
Le Conte's thrasher	*Toxostoma lecontei*	SSC/-/BLM Sensitive	**PRESENT – Resident**. Nesting habitat present.
Mammals			
Pallid bat	*Antrozous pallidus*	SSC/-/BLM Sensitive	**PRESENT – Foraging.** Species detected during acoustic surveys as a foraging species; no roosting habitat occurs onsite. Predicted occupied habitat present onsite in DRECP model.
Townsend's big-eared bat	*Corynorhinus townsendii*	SSC, CT/-/BLM Sensitive	**LOW POTENTIAL – Foraging.** No roosting habitat occurs, but the species may potentially forage onsite. Predicted occupied habitat present onsite in DRECP model.
Western mastiff bat	*Eumops perotis californicus*	SSC/-/BLM Sensitive	**PRESENT – Foraging.** Species detected during acoustic surveys. This species has a low potential to roost onsite.
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	SSC/-/-	**PRESENT – Foraging.** Species detected during acoustic surveys. This species has a low potential to roost onsite.
Western red bat	*Lasiurus blossevillii*	SSC/-/-	**LOW POTENTIAL – Foraging.** No roosting habitat occurs, but the species may potentially forage onsite.
California leaf-nosed bat	*Macrotus californicus*	SSC/-/BLM Sensitive	**MODERATE POTENTIAL – Roosting/Foraging.** Roosting and foraging habitat occurs onsite, although not documented during acoustic surveys. Predicted occupied habitat present onsite in DRECP model.

Table 3.4-1. Special-Status Wildlife Species Evaluated for Potential Occurrence within the Study Area

Common Name	Scientific Name	Status (State/Federal/BLM)[a]	Potential for Occurrence within Study Area
Cave myotis	*Myotis velifer*	SSC/-/ BLM Sensitive	**PRESENT – Foraging.** Species detected during acoustic surveys. Closest known maternity colony is located at the Hodge Mine, approximately 3.4 miles south of the study area.
American badger	*Taxidea taxus*	SSC/-/-	**PRESENT – Resident**. No live badgers were seen. Evidence that badgers utilize the Project site. Predicted occupied habitat present onsite in DRECP model.
Desert kit fox	*Vulpes macrotis arsipus*	FCG 4000-4012/-/-	**PRESENT- Resident.** Nine individuals documented during surveys.
Desert bighorn sheep	*Ovis Canadensis nelsoni*	-/-/-	**LOW POTENTIAL –** WHMAs located 0.5 miles north and 0.9 miles southwest of Project.
Burro deer	*Odocoileus hemionus eremicus*	-/-/-	**MODERATE POTENTIAL** – No records of this species are found for the site, it has a moderate potential to utilize the surrounding area for foraging or movement.

[a] Status codes:

State

SE = State listed as endangered; ST = State listed as threatened; CT = State candidate as threatened
SSC = California Species of Special Concern. Species of concern to CDFW because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction
CFP = California Fully Protected Species WL = State watch list
FGC 4000-4012 = Fish and Game Code Sections 4000 through 4012 – California regulations addressing fur-bearing mammals

Federal

FE = Federally listed endangered: species in danger of extinction throughout a significant portion of its range; FT = Federally listed, threatened: species likely to become endangered within the foreseeable future
BGEPA = Bald and Golden Eagle Protection Act

Bureau of Land Management

BLM Sensitive = Species that require special management consideration to avoid potential future listing under the FESA and that have been identified in accordance with procedures set forth in BLM Manual section 6840.

Mojave Desert Tortoise

Background

Agassiz's Mojave desert tortoise is a long-lived, medium-sized, burrowing, terrestrial turtle in the family Testudinidae. They grow slowly, reach sexual maturity at a delayed age, and live long lives; they have low reproductive output each year, but can reproduce for many years and show no reproductive senescence; their eggs and hatchlings have very low survivorship but adults display high survivorship. Populations are able to overcome low annual reproductive rates and low survivorship of eggs and young because of the long, reproductive lives and high survivorship of adult females. Thus, human activities that negatively affect population density and survival of individual adult tortoises are likely to cause declines in tortoise populations (Doak et al. 1994; Wisdom et al. 2000; Reed et al. 2009; Tuma et al. 2016).

Agassiz's Mojave desert tortoise was listed under the Endangered Species Act (ESA) by the USFWS following concerns that several populations had undergone significant and precipitous declines. In response to reports of die-offs from scientists and managers in the field, the USFWS emergency-listed tortoise populations located north and west of the Colorado River in California, Nevada, Utah, and the northwestern portion of Arizona as Endangered on August 4, 1989. The USFWS subsequently changed the desert tortoise to Threatened status on April 2, 1990. The desert tortoise was listed as Threatened by the State of California on August 3, 1989. The Project area is within the Colorado Desert Recovery Unit of the Mojave Population of the Desert Tortoise (USFWS 2011a).

Agassiz's Mojave desert tortoise occupies a broad range of landforms throughout the Mojave and Colorado Deserts, at elevations ranging from below sea level to 2,225 meters (7,300 feet) amsl (Luckenbach 1982). Within California, the most favorable habitat occurs at elevations of approximately 305 to 914 meters (1,000–3,000 feet) amsl (Luckenbach 1982), though more recent evidence from range-wide monitoring efforts indicates the desert tortoises are consistently documented above 914 meters (3,000 feet) (USFWS 2006a, 2011). Luckenbach (1982) reported that desert tortoises are often found on valley bottoms and on bajadas; Bury et al. (1994) determined desert tortoises in the eastern Mojave Desert occur on a variety of landforms from flats and bajadas to rocky slopes. Andersen et al. (2000) found that higher tortoise densities were encountered in areas with loamy soils. Mojave desert tortoises typically occupy habitats dominated by creosote bush scrub at lower elevations, and blackbrush scrub and juniper woodland ecotones at higher elevations (Germano et al. 1994). Luckenbach (1982) reported that the most favorable habitats within California contained a high diversity of perennial plant species and high production of annual plant (forage) species. Mojave desert tortoises in California are mostly distributed among four communities, including creosote scrub, cactus scrub, saltbush scrub, and Joshua Tree woodland, but are most commonly found in desert scrub vegetation communities dominated by creosote (Luckenbach 1982). Mojave desert tortoises use cover sites such as soil burrows, pallets, and caliche caves (Bulova 1994; O'Connor et al. 1994). Tortoises hibernate, aestivate, or rest in subterranean burrows or caves, spending as much as 98 percent of their time underground (Marlow 1979; Nagy and Medica 1986).

Mojave desert tortoises are active during the spring, summer, and fall periods, and generally inactive during the winter. Tortoises begin their spring activity period upon emergence from hibernacula. In the eastern Mojave Desert, Mojave desert tortoises emerge from hibernacula

between mid-February and late April (Rautenstrauch et al. 1998; Nussear et al. 2007); in the western Mojave Desert, tortoises emerge from hibernacula between early March and late April (Burge 1977). Tortoises are most active between mid-April and mid-May, a period when they forage on spring annual plants. Mojave desert tortoises are herbivorous, consuming a diet of annual, perennial, and grass species. The majority of their diet consists of the succulent parts and blooms of spring annual plants. For approximately 60-65 days between mid-May and mid-July, tortoise activity declines significantly due to increasing temperatures and precipitation, and most enter a period of dormancy called aestivation. Mojave desert tortoises are typically activated from aestivation when mid-summer thunderstorms produced by the North American Monsoon between early to mid-July and September provide opportunities for drinking. Mojave desert tortoises remain active until late October, when most enter a second dormancy period – hibernation. Tortoises in the northeastern portion of the species' range may hibernate for as long as six months (Woodbury and Hardy 1948; Bury et al. 1994).

Mojave desert tortoises occupy home ranges that include cover sites, mates, mineral salt licks, and drinking sites, and have a "remarkable" knowledge of the locations of these resources within their homes ranges, and often travel along well-worn paths (Berry 1986). Arguably the most important resources within the home ranges of tortoises are cover sites, particularly burrows and caliche caves. Not only do cover sites offer protection from extreme temperatures and predators, but they also serve as nest site locations and centers for social interactions among tortoises, particularly mate-seeking. Males typically use more cover sites, cover greater distances, and use larger areas as they search for females to court and copulate (Burge 1977; Bulova 1994; O'Connor et al. 1994).

The decline in Mojave desert tortoise population densities and abundances since the 1970s has been attributed to numerous threats, and the plight of the desert tortoise has been described as a "death by a thousand cuts." In the final rule for Endangered Species Act listing, the USFWS attributed population decline to two major factors: 1) habitat loss and degradation caused by human activities such as OHV use, urbanization, agriculture, energy development, military training, mining, and livestock grazing; and 2) mortality of individual desert tortoises to disease (URTD), increased predation by common ravens, collection by humans for pets or consumption, and collisions with vehicles on paved and unpaved roads (USFWS 1990). These threats and others have cumulatively contributed to desert tortoise population declines within the Mojave Population of the species, which includes the Colorado Desert Recovery Unit (USFWS 2011a). Anthropogenic threats are exacerbated during droughts, and can lead to disease outbreaks where multiple threats combine to add stress to tortoise populations.

The Project is located in the historic range of Agassiz's Mojave desert tortoise, but anthropogenic disturbances in the Project vicinity, including agriculture, OHV recreation, utility corridors, roads, and other developments, and residential trash dumping, appear to have limited tortoise populations in the vicinity. According to the CNDDB, there are 16 occurrences for Mojave desert tortoise within five miles of the Project (CDFW 2016). The observations suggest that Mojave desert tortoise populations in the vicinity of the Project are most dense on bajadas of nearby mountain ranges, particularly along the north slopes of the Mule Mountains situated southwest of the Project. They appear to be largely absent from the valley floors, though they may access them during April and May when annual forage plants are in bloom, and during dispersal movements between the Mule Mountains and the McCoy Mountains located to the north.

Survey Results

Full-coverage protocol Mojave desert tortoise surveys were conducted in Spring 2013 to document tortoise sign (e.g., live tortoises, shell/bone/scutes, scat, burrows/pallets, tracks, and egg shell fragments) within the Study Area. Mojave desert tortoise surveys followed the most current USFWS survey protocol (USFWS 2010) and consisted of belt transects approximately 10 meters wide to provide 100 percent coverage of the portion of the Study Area administered by BLM (i.e., 4,885 acres). Preliminary baseline herpetofaunal investigations and visual encounter surveys were not performed on the 160-acre private inholding. However, a habitat assessment of the inholding was conducted in Spring 2015 by walking 100 percent of the parcel. There is predicted occupied habitat present onsite in the DRECP suitable habitat model.

Mojave desert tortoise sign found during protocol surveys included six carcasses (Figure 3.4.1). All carcasses were disarticulated and over four years of age. No live Mojave desert tortoises or tortoise burrows were detected during protocol surveys. In addition to the carcasses found during protocol surveys, a set of Mojave desert tortoise tracks was found incidental to protocol surveys by Alice Karl, PhD. during the botany surveys in March 2013 traveling north across the dunes (Figure 3.4.1). Also, a live Mojave desert tortoise individual was observed on September 4, 2014, incidentally during avian surveys, approximately 1.3 kilometers from the southern boundary of the proposed Project site (Figure 3.4-1). This individual was an adult female and was observed foraging in the open. The general habitat and wildlife surveys performed on the 160-acre private inholding, which included focused surveys for burrowing owl and rare plants, did not find any burrows that would be associated with Mojave desert tortoise. Although the entire Project site could be considered suitable Mojave desert tortoise habitat, the lack of burrows and observations of 6 older, disarticulated tortoise carcasses and a set of fresh tortoise tracks during surveys of the Project site in 2013 (Ironwood 2016) appear to suggest that Mojave desert tortoises occasionally disperse through the area.

The USFWS protocol provides methods to estimate the abundance of tortoises occurring within a survey area. However, the USFWS density calculation algorithm is dependent upon documenting live tortoises during protocol surveys. Since no live Mojave desert tortoises were observed within the Study Area during protocol surveys, the USFWS algorithm cannot be used to estimate the Mojave desert tortoise population density. Based on the CNDDB records in the Project vicinity and survey results within and adjacent to the Project, tortoise densities in the Project site are very low, likely less than one tortoise per square kilometer. This is consistent with tortoise densities on the nearby MSEP, where densities were estimated to be 0.2 tortoises/km^2.

Figure 3.4-2 shows the situation of the Project with respect to the USGS desert tortoise habitat model. This shows the Project area to be situated within an area with a predicted habitat potential model score of 0.5, which is the mid-range on a scale of 0 to 1. The Project area is not mapped as predicted occupied habitat in the habitat layers for the DRECP analysis, and is not included in any Tortoise Conservation Areas or linkages in Figure D-16 of DRECP.

Mojave Fringe-Toed Lizard

Background

The Mojave fringe-toed lizard (*Uma scoparia*) is designated as a BLM Sensitive species and CDFW SSC. This species is endemic to southern California deserts and Arizona, where it is restricted to eolian sand habitats in the deserts of Inyo, Los Angeles, Riverside and San

Bernardino Counties. The species is restricted to areas with fine aeolian sand including both large and small dunes, margins of dry lakebeds and washes, and isolated pockets against hillsides. The species may also share specific habitat requirements that the closely related Coachella Valley Fringe-toed lizard (*Uma inornata*) needs, such as access to shaded sand for thermoregulatory burrowing (Muth 1991). Distribution of the Mojave fringe-toed lizard is naturally fragmented because of their obligate habitat specificity to eolian sand, a patchy habitat type (Murphy et al. 2006). According to the CNDDB, there are 14 records of Mojave fringe-toed lizards within five miles of the Project site and two records within the Project site (CDFW 2016). The DRECP suitable habitat model predicts occupied habitat is present onsite.

The Mojave fringe-toed lizard is found in arid, sandy, sparsely vegetated habitats and is associated with creosote scrub throughout much of its range (Norris 1958; Jennings and Hayes 1994). Windblown sand is required for the lizard's life cycle. This species is restricted to habitats of fine, loose eolian sand, typically with sand grain size no coarser than 0.375 mm in diameter (Turner et al. 1984; Jennings and Hayes 1994; Stebbins 1944). Mojave fringe-toed lizard diets consist of insects such as, but not limited to, ants, sand cockroaches, grasshoppers and spiders.

Mojave fringe-toed lizards normally hibernate from November to February, emerging from hibernation sites from March to April. The breeding season is April to July, and adult Mojave fringe-toed lizards reach sexual maturity two summers after hatching (Jennings and Hayes 1994; USFWS 2011b). From April to May, while temperatures are relatively cool, this species is active during mid-day; from May to September, lizards are active in mornings and late afternoon, but seek cover during the hottest parts of the day. Mojave fringe-toed lizards can usually be found burrowed in the sand on the side of the dunes.

Survey Results

Two preliminary baseline herpetofaunal investigations from October 22 to 23, 2012 and March 25 to April 12, 2013 and one visual encounter survey in Spring 2013 were completed on the portion of the Project site administered by BLM (i.e., 4,885 acres and additional buffer area). Herpetological surveys also included the 160-acre private inholding. Preliminary baseline herpetofaunal investigations consisted of walking belt transects approximately 10 meters wide to provide 100 percent coverage of the portion of the Project site administered by BLM. The visual encounter survey, which is a more intensive survey compared to baseline investigations, was performed along 12 transects (ten on-site and two in a one-mile buffer zone). Preliminary baseline herpetofaunal investigations and visual encounter surveys were not performed on the 160-acre private inholding. However, a habitat assessment of the inholding was conducted in Spring 2015 by walking 100 percent of the parcel.

The presence of the Mojave fringe-toed lizard within the Study Area was confirmed during herpetofaunal surveys. Occurrences of the species are shown in Figure 3.4-3, overlaid on the vegetation alliances. Thirteen individuals determined to be of the genus *Uma* were collected briefly to identify them to the species level using the inter-naris scale pattern, as recommended by Stebbins and McGinnis (2012). All individuals were determined to be Mojave fringe-toed lizard, as opposed to the Colorado Desert fringe-toed lizard (*Uma notata*) or the Coachella Valley fringe-toed lizard (*Uma inornata*). The Project site is coincident with a portion of the range of the Mojave fringe-toed lizard, but is not coincident with the ranges for either the Colorado Desert fringe-toed lizard or the Coachella Valley fringe-toed lizard. Therefore, it is assumed that all observations of *Uma* recorded during herpetofaunal surveys are the Mojave

fringe-toed lizard. Approximately 241 individuals were detected during herpetofaunal surveys. Observations of Mojave fringe-toed lizards were confined to the northwest corner and gen-tie line portion of the Project site (Figure 3.4-3).

The habitat assessment of the 160-acre private inholding determined that this area does not have suitable habitat for fringe-toed lizards. No lizards or evidence of lizards utilizing the 160-acre inholding were found.

Couch's Spadefoot Toad

Background

Couch's spadefoot toad (*Scaphiopus couchii*) is a CDFW Species of Special Concern and a BLM Sensitive species. It is found where substrate is capable of sustaining temporary breeding pools for at least nine days (to allow larval development), and loose enough to permit burial in subterranean burrows. Breeding habitat includes temporary impoundments at the base of dunes as well as road or railroad embankments, temporary pools in washes or channels, pools that form at the downstream end of culverts, and playas. There are reports from other projects of the species being present at the CRSS. There is predicted occupied habitat present onsite in the DRECP suitable habitat model.

Survey Results

The BRTR (Ironwood 2016) identified 27 locations within the Study Area that had standing water at some point between 2008 and 2012. Two of these locations were identified as likely to support the species, due to their extent and association with dry desert wash woodland plant species. One of these was the *Parkinsonia florida-Olneya tesota* alliance area located near the NRG Blythe Solar facility (also identified in Huffman-Broadway [2017] as floodplain FP-1), and the other was located in the buffer outside of the Project area. Both locations were visited after heavy rains between 2008 and 2012 to determine if they held ponded water for more than 8 days, and they were also subjected to monitoring during the monsoon season in the summer of 2013. Neither area was determined to hold ponded water for more than 8 days.

Western Burrowing Owl

Background

The western burrowing owl (*Athene cunicularia hypugaea*) is a CDFW SSC. Burrowing owls inhabit open dry grasslands and desert scrubs throughout much of the western U.S. and southern interior of western Canada. They are typically a year-round resident in much of California (Gervais et al. 2008). There is predicted occupied habitat present onsite in the DRECP suitable habitat model.

Little is understood about the migratory and post-breeding dispersal movements of burrowing owls. Breeding populations from the northern range of the species are apparently migratory, though southern California populations are probably year-round residents (Thomsen 1971). Increases in winter population sizes within southern California, particularly within the Imperial Valley, are probably the result of immigration of owls from more northerly areas (Coulombe 1971; Rosenberg and Haley 2004). Nesting burrowing owls banded in Idaho have been observed wintering in southern California (Brian W. Smith, personal communication, November 2006). A

significant portion of the burrowing owl population in southern California includes year-round residents and short-distance dispersers. Male burrowing owls that are year-round residents may overwinter in burrows within their nesting areas, as this allows them to retain possession of burrows and territories, as well as maintain the burrows (Johnsgard 2002:165). Burrowing owls in southern California may winter in the nesting burrow or a nearby burrow following successful fledging of juveniles, but are more likely to disperse from the nesting area if the nest fails (Catlin et al. 2005; Rosier et al. 2006). Thus, burrowing owls may occur in the Project area as year-round residents and breeders, and/or as winter residents from populations that breed further north, and/or as transients during dispersal and migration. According to the CNDDB, there are 42 records for burrowing owl within five miles of the Project site (CDFW 2016).

In the Colorado Desert, burrowing owls generally occur in scattered populations, but they can have a higher affinity for agricultural lands where rodent and insect prey tend to be more abundant, including along the lower Colorado River (Gervais et al. 2008). This strong affinity to irrigated agricultural lands is evident in concentration of burrowing owls in the Imperial Valley, where it is estimated that approximately 70 percent of the species breeding population in California resides (Audubon 2017a). From this core population of owls, it is estimated that between 20 to 25 percent of the population remains within the Imperial Valley during the winter, with immigration likely occurring to the north (Coulombe 1971). This winter migration has the potential to provide a source of emigration into the Project area, since the Imperial Valley population is approximately 45 miles southwest of the Project area. Burrowing owls tend to be opportunistic feeders. Their diet consists primarily of large arthropods, mainly including beetles and grasshoppers. Small mammals, especially mice and voles (*Microtus*, *Peromyscus*, and *Mus* spp.), are also important food items for this species. Other prey animals include reptiles and amphibians, young cottontail rabbits, bats, and birds, such as sparrows and horned larks. Consumption of insects increases during the breeding season.

Western burrowing owls typically nest in mammal burrows, especially those created by California ground squirrels, kit fox, and coyote; although they may use Mojave desert tortoise burrows or man-made structures including culverts and debris piles. Burrowing owls have a strong affinity for previously occupied nesting and wintering habitats. They often return to burrows used in previous years, especially if they were successful at reproducing there in previous years (Gervais et al. 2008). The southern California breeding season, defined as from pair bonding to fledging, is from February to August, with a peak of breeding activity from April through July.

Survey Results

Focused western burrowing owl surveys were conducted in an effort to assess occupancy, abundance, site use and distribution. Burrowing owl surveys were conducted in Fall 2012, Spring 2013, and Spring 2014. Surveys performed in Fall 2012 and Spring 2013 were conducted in accordance to the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) and *Burrowing Owl Survey Protocols and Mitigation Guidelines* (California Burrowing Owl Consortium [CBOC] 1993). Surveys performed in Spring 2014 followed a Project-specific protocol. This Project-specific protocol incorporates guidance from CDFW (2012) and CBOC (1993) and is included as Appendix C of the BRTR. Focused surveys were performed across the portion of the Study Area administered by BLM (i.e., 4,885 acres) plus a 150-meter buffer during the Spring 2014 survey effort. Burrowing owl surveys in previous years were conducted on 4,885 acres with a 150-foot buffer (which included binocular surveys of a portion of the private inholding, and other private

lands contiguous with the outer boundaries of the BLM lands surveyed). All burrowing owl sightings and burrows with burrowing owl sign (e.g., whitewash, tracks, pellets, feathers) were mapped and recorded. Burrows were ranked by class (i.e., Class 1 to 4) depending on the age and type of sign present.

During Fall 2012, Spring 2013, and Spring 2014, 70 burrows ranked Class 1 (2012, n = 3; 2013, n = 1; 2014, n = 0), Class 2 (2012, n = 2; 2013, n = 5; 2014, n = 5) and Class 3 (2012, n = 0; 2013, n = 15; 2014, n = 39) were detected within the Study Area (Figure 3.4-4). The burrow Class ranks are defined as follows: Class 1 – Excellent (usable burrow with burrowing owl present), Class 2 – Good (usable burrow, fresh sign but no owl present), and Class 3 – Fair (usable burrow, inactive with old sign, no burrowing owl present). One of these burrows was detected within the 150-meter survey buffer and indicated recent burrowing owl occupation/use (Figure 3.4-4). Monitoring surveys conducted during the 2013 breeding season documented live owls at two burrows. One of these burrows was potentially occupied (Class 2) during Fall 2012 surveys; the other was a previously undocumented rodent burrow. Young were not positively identified at either burrow during 2013 monitoring surveys. No live burrowing owls were detected during 2014 surveys.

Burrowing owls were also incidentally reported in and around the Study Area on four occasions between September 2014 and February 2015. Only one of these detections (made during the winter 2015) was within the Study Area (Figure 3.4-4). Finally, a burrow complex containing a pellet and feather was detected during a reconnaissance survey on the 160-acre private inholding. Results from burrowing owl surveys suggest use of the Study Area changes temporally. Survey evidence suggests greater use of the Study Area outside of the breeding season, with only two pairs remaining to attempt reproduction in 2013 and none in 2014. Although burrowing owls exhibit high burrow fidelity, surveys documented dynamic occupancy of burrows, likely a factor of dynamic movement patterns.

Golden Eagle

Background

The golden eagle (*Aquila chrysaetos*) is protected by the BGEPA and MBTA, and is a California Fully Protected and BLM Sensitive species. This large eagle is found throughout the U.S. typically occurring in open country, prairies, tundra, open coniferous forest and barren areas, especially in hilly or mountainous regions. Throughout their western range, the golden eagle can be either a year-round resident, or migratory (Kochert and Steenhof 2002; Audubon 2017b). Migratory patterns are usually fairly local in California where adults are relatively sedentary, but dispersing juveniles sometimes migrate south in the fall. This species is generally considered to be more common in southern California than in the northern part of the state (U.S. Forest Service [USFS] 2008).

Within the desert regions, this species usually builds nests on cliff ledges. Breeding in southern California starts in January, nest building and egg laying in February to March, and hatching and raising the young eagles occur from April through June. Once the young eagles are flying on their own, the adult eagles will continue to feed them and teach them to hunt until late November (WRI 2010). Due to the large investment in energy and time that an adult golden eagle is required to provide in raising young, some eagles will forgo a season of reproduction even when food supply is abundant (WRI 2010).

Golden eagles need open terrain for hunting and prefer grasslands, deserts, savanna, and early successional stages of forest and shrub habitats. Golden eagles primarily prey on lagomorphs and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al. 2002).

Absent interference from humans, golden eagle breeding density is determined by either prey density or nest site availability, depending upon which is more limiting (USFWS 2009). A compilation of breeding season home ranges from several western United States studies showed an average home range of 20 to 33 square kilometers that ranged from 1.9 to 83.3 square kilometers (Kochert et al. 2002). Golden eagles in the Mojave Desert are believed to have large home ranges due to low prey densities.

Survey Results

Focused golden eagle surveys were conducted in December and January 2013/2014 and 2014/2015 following the Interim Golden Eagle Inventory and Monitoring Protocols (Pagel et al. 2010) and other recommendations. There is no potential golden eagle nesting habitat on the Project area; however, suitable nesting habitat exists within 10 miles of the Study Area in the Little Chuckwalla Mountains, the Mule Mountains, and the McCoy Mountains. DRECP documents one golden eagle nest occurrence in the McCoy Mountains within the 10 mile radius of the Project area. Therefore, focused golden eagle surveys were conducted within a 10-mile radius surrounding the Study Area. Eighteen observation points were established in the 10-mile radius and each was visited twice during the courtship/breeding season (Figure 3.4-5). Some of the closely-spaced observation points surveyed in 2013/2014 were re-located prior to the start of 2014/2015 surveys in order to provide a wider geographic range of coverage.

One adult golden eagle was recorded during focused surveys. This individual was detected on January 21, 2014 and was observed soaring low heading southwest (Figure 3.4-5). No golden eagles were detected during a follow up visit to the same location on February 11, 2014. There were no golden eagle sightings during the 2014/2015 surveys. In addition, there were no incidental golden eagle observations during other biological surveys, including migratory bird surveys and line transect sampling.

Although DRECP identifies one nesting site in the McCoy Mountains within the 10-mile radius, no active golden eagle nests were detected within the 10 mile radius surrounding the Study Area during surveys. The one historic golden eagle territory was occupied by a pair of red-tailed hawks during the 2013/2014 breeding season. Two nests were observed in the vicinity of the eagle sighting documented in January 2014. One nest was inactive and the other was occupied by red-tailed hawks.

To assess golden eagle prey abundance within the Study Area, surveys were conducted in Spring 2013 to estimate population densities of small mammals, including black-tailed jackrabbits and cottontail rabbits. In March and April 2013, a total of 17 black-tailed jackrabbits were detected across the 4,855 acre Project site, equating to an estimate of approximately 0.0035 black-tailed jack rabbits/acre. A total count of cottontail rabbits was not conducted, therefore, a density estimate cannot be established for the species.

Other Migratory Birds and Raptors

Background

In addition to special-status avian species for which species-specific surveys were conducted (i.e., burrowing owl and golden eagle), many other common and special-status migratory birds and raptors are expected to occur within the Study Area. Not only does the Study Area provide nesting habitat for species of migratory birds and raptors, it is located along a major migration corridor (i.e., the Pacific Flyway, which runs from Alaska to Patagonia and stretches inland from the Pacific Ocean to encompass parts of Montana, Wyoming, Colorado and New Mexico). The Study Area's proximity to the Colorado River increases the likelihood of migratory birds stopping over. Migratory birds and all raptors native to North America are afforded protection under the MBTA and FGC Sections 3503, 3503.5, and 3513. Therefore, general avian surveys were conducted to characterize avian use of the Study Area and assess Project risks to all species.

Survey Results

Avian surveys conducted for the Project used various sampling methodologies to depict the occurrence and habitat use by birds during all critical life stages. Sampling models and survey techniques were designed to maximize the detection of migratory birds and local residents; including all raptor, shorebird, waterfowl and passerine species. Three types of general avian surveys were conducted: (1) migratory bird surveys; (2) line transect sampling; and (3) nesting raptor and raven surveys. A summary of methods and results for these survey efforts follows.

Migratory Bird Surveys

Migratory bird surveys were performed to record observed avian migration and use patterns within and adjacent to, the Study Area. Data on diurnal bird migration provided information on: (1) seasonal and overall avian population pulses and individual species pulses within seasons; (2) range of daily behavior and movements; (3) flight elevation through and near the Project; and (4) duration of seasonal occurrence by migratory birds, including raptors.

Weekly migratory bird surveys were conducted during Spring and Fall migration periods in 2013 and 2014 using unlimited-distance bird migration survey methods. These surveys followed guidance provided by BLM, USFWS, and CDFW, and the protocol prescribed by the Hawk Migration Association of North America (HMANA). The HMANA protocol is now standard for hawk migration counts (Bird and Bildstein 2007, Bildstein et al. 2007). The protocol for migratory bird surveys is included as Appendix D of the BRTR.

Two migration points (i.e., MP01 and MP02) were initially established within the Study Area in Fall 2013 (Figure 3.4-6). These MPs bisected the Study Area along the central east-west axis, and exhibit near 360 degree views of the distant horizon to maximize detection of migrating birds passing over the area. After the Fall 2013 season, avian biologists determined that migration points should be adjusted due to the pattern of migratory movement prevalent in the area. Therefore, MP01 and MP02 were replaced with MP03 andMP04 at the start of Spring 2014 survey season (Figure 3.4-6).

A close inspection of the data collected during migratory bird surveys revealed two distinct peaks in migration in Fall 2013 (October 1 and October 9). Few observations were made in Spring 2013 and no peak in migration was apparent. Two peaks in migration were apparent for

2014. The first peak occurred in Spring 2014 around March 24; the second peak occurred in Fall 2014 around September 21.

Uncontrollable and variable factors including rainfall rates, temperatures, wind speed and wind direction could have an influence on these results and these peak migratory periods should be considered approximate due to the limited number of survey seasons represented. The greatest numbers of individual species detected at one time during the spring were flocks of unidentified swallows and tree swallows with numbers reaching 1000 and 950 birds respectively on a single day (all in 2014). Large number of turkey vultures (782 in one day for the highest count) and Swainson's hawks (620 in one day) were observed during fall migration.

Special-status species observed during migratory bird surveys include Swainson's hawk (state-listed as threatened), Cooper's hawk (designated by CDFW as a SSC), ferruginous hawk (a BLM Sensitive species), Vaux's swift (designated by CDFW as a SSC), northern harrier (designated by CDFW as a SSC), loggerhead shrike (designated by CDFW as a SSC), and Le Conte's thrasher (designated by CDFW as a SSC), both of which are year-round resident species.

Line Transect Sampling

Line transect sampling was conducted to depict avian use patterns within and adjacent to the Study Area. Data from line transect sampling provided information on the following: (1) sedentary and migratory populations; (2) species richness (number of different species present); (3) species diversity (species richness combined with species evenness); (4) species use, behavior and movements; and (5) species distribution across the Project.

Line transect sampling was conducted from Spring 2013 to Winter 2014/2015, not including the summer months. Surveys were timed to capture migrants, breeding birds, and local residents. Line transect sampling was conducted by traveling a pre-determined route and recording all bird detections (visual or aural) on either side of the transect line. The protocol for line transect sampling is included as Appendix D of the BRTR.

A total of eight 2,000-meter transects were established in Spring 2013 and eight more were added in Fall 2013 (Figure 3.4-6). To facilitate robust data analysis, eight of the 2,000-meter line transects were situated within the Study Area and eight were located outside the Study Area on public lands. Two 500-meter transects were added to survey the 160-acre inholding in October 2014 (Figure 3.4-6). Thus, a total of 18 transects were surveyed as part of line transect sampling.

A total of 3,534 detections were made during the 345 surveys. A total of 17,973 individuals were documented during line transect sampling. To maintain consistency with regards to the number of transects sampled per season, a random subsample of the data was pulled to facilitate analysis. The final subsample contained data from 259 transects, 2,253 detections, and 16,507 individuals. ProgramDistance (Thomas et al. 2010) was used to determine a total density of birds within and outside the Study Area. In every season, species diversity was greater outside the Study Area compared to within the Study Area. Commonly observed species include the barn swallow (*Hirundo rustica*), Swainson's hawk (*Buteo swainsoni*), and turkey vulture (*Cathartes aura*). In all but one season (i.e., Spring 2014), the density estimate was also greater outside the Project site. The greater species diversity and density along the transects outside of the Project site, relative to the transects within the site, are potentially associated with greater avian habitat diversity outside of the site. As shown in the vegetation map (Figure 3.3-2), and the location of the avian survey transects in the BRTR, the transects outside of the Project site boundary either

cross through or are adjacent to patches of *Parkinsonia florida-Olneya tesota* alliance. This habitat provides a more diverse structure, which has the potential to result in more nesting/breeding, resting, and cover resources for migrating birds.

Nesting Raptor/Raven Surveys

Nesting raptor and raven surveys were conducted monthly in the spring of 2013 and 2014. This effort focused on the detection of all raptor and raven nests within 1-mile of the Study Area to collect baseline data on the number and distribution and success rates of raptor and raven nests prior to development. All nests (including the incidental detection of resident passerine species) were mapped and recorded. A total of 11 raptor/raven nests were recorded during the two years within the Project site and 1-mile buffer (Table 3.4-2). In 2013, there were four red-tailed hawk nests, and two common raven nests. 2014 data showed an increase in the overall number of nests, including five red-tailed hawk nests, two nests utilized by unknown species of hawk, and three common raven nests. The status of each nest at the time of the survey, and the number of young observed in a nest (if applicable) are shown in Table 3.4-2. Monthly monitoring efforts updated development stage and breeding status at each raptor and raven nest.

Table 3.4-2. Raptor/Raven Nests Detected on the Project Site, Spring 2013 and 2014

Nest ID	Species	Easting	Northing	Date	Status	# Young
BH0001	RTHA	708278	3718453	2013		
RKR0001/ QZNR-031214-03	RTHA/ UNHA	704893	3716895	4/22/2013/ 5/13/2014	Incubation/ Inactive	
RKR0002/ QZNR-021414-01	CORA/ RTHA	703684	3717850	4/22/2013/ 5/31/2014	Incubation/ Nest Cycle Complete	
RKR0004/ QZNR-031214-02	RTHA/ RTHA	706970	3715231	5/9/2013/ 5/13/2014	Fledgling/Nest Cycle Complete	?/ 2
RKR0006/ QZNR-031214-08	RTHA/ RTHA	711168	3716543	4/22/2013/ 5/31/2014	Hatchling/ Nestling/ Nest Cycle Complete	?/2
RKR0014/ QZNR-031214-01	CORA/ CORA	708293	3714185	5/9/2013/ 5/31/2014	Hatchling/Nestling/ Nest Cycle Complete	
QZNR-031214-04	UNHA	701,352	3,718,549	5/13/2014	Inactive	
QZNR-031214-05	RTHA	700,831	3,718,568	5/13/2014	Nest Cycle Complete	
QZNR-031214-06	CORA	702,793	3,717,202	5/31/2014	Nest Cycle Complete	
QZNR-031214-07	RTHA	709,555	3,713,171	5/31/2014	Nest Cycle Complete	1
QZNR-032624-01	CORA	708,530	3,718,554	5/30/2014	Hatchling/ Nestling	2

RTHA = red-tailed hawk UNHA = unknown hawk CORA = common raven

A total of 26 raptor or raven nests were documented during focused golden eagle surveys (Figure 3.4-7). All but one of the nests recorded were located beyond the survey area for nesting raptor/raven surveys (i.e., the Study Area plus a one-mile buffer). These nesting raptors included red-tailed hawk, prairie falcon, and undetermined raptor species. Sixteen of these nests were in cliff or rock outcrop substrates, nine were in power line support structures, and one was located in an ironwood tree (*Olneya tesota*). In 2013/2014, species associated with raptor nests included four red-tailed hawks (*Buteo jamaicensis*), two prairie falcons (*Falco mexicanus*), and 12 undetermined species of raptor. For undetermined designations, a nest or partially completed nest was observed that exhibited characteristics of a raptor nest, and may or may not have been associated with a species of raptor observed in the general vicinity (but not at or on the nest). Seven of the nests observed during focused golden eagle surveys were determined to be active, two were determined to be active and occupied, and nine were determined to be inactive. In 2014/2015, two nests were determined to be active: one red-tailed hawk and one prairie falcon.

Desert Kit Fox

Background

The desert kit fox (*Vulpes macrotis*) is protected by the FGC Section 4000 as a fur-bearing mammal. Desert kit foxes are fossorial mammals that occur in arid open areas, shrub grassland, and desert ecosystems. Desert kit fox typically consume small rodents, primarily kangaroo rats, rabbits, lizards, insects, and in some cases immature Mojave desert tortoises. Dens typically support multiple entrances, but desert kit fox may utilize single burrows for temporary shelter. Litters of one to seven young are typically born in February through April (Egoscue 1962; McGrew 1979).

Survey Results

Desert kit fox burrow surveys of the Study Area were conducted by walking transects at 10-meter spacing to ensure complete visual coverage of the site. All desert kit fox single-entrance dens and canid complexes that could be occupied without modification were recorded.

Full-coverage burrow surveys revealed 46 canid complexes and 45 single-entrance dens (91 potentially occupied dens/complexes) with some kit fox sign within the Study Area. Twenty-four of these dens/complexes had signs of recent activity, (i.e., desert kit fox tracks, or scat). Each of these 24 dens/complexes was revisited for further inspection of signs of activity. Upon re-inspection, eight dens/complexes were determined to be potentially active, all of which were in the southern portion of the Study Area (Figure 3.4-8). A camera station was set up at each of the eight dens and run for three consecutive days and nights. Six of the eight cameras captured images of nine total individual desert kit fox.

American Badger

Background

The American badger (*Taxidea taxus*) is a CDFW SSC. The species was once fairly widespread throughout open desert and grassland habitats of California. Badgers are now generally uncommon with a wide distribution across California, except from the North Coast area. Badgers inhabit burrows and often predate and forage on other small mammal burrows as evidenced by claw marks along the edges of existing burrows. This species is most abundant in the drier open

stages of most shrub, forest, and herbaceous habitats with friable soils. Badgers are generally associated with treeless regions, prairies, parklands, and desert areas (Zeiner et al. 1990). Badgers feed mainly on various species of small mammals and capture some of their prey above ground, foraging on birds, eggs, reptiles, invertebrates, and carrion. According to the CNDDB, there are two records for American badger within five miles of the Project site (CDFW 2016). There is predicted occupied habitat present onsite in the DRECP suitable habitat model.

Survey Results

Focused surveys were not conducted for the American badger, and the species was not directly observed during other surveys or on imagery from camera stations around the Study Area. However, several badger digs and scat were found on the Study Area, mostly near the southwestern perimeter. The entire Study Area is considered suitable habitat for the American badger.

Bats

Background

Many bat species occurring in Southern California are considered to be regionally sensitive by BLM and CDFW. The Project site and vicinity supports suitable roosting and foraging habitat for several bat species, including some of those considered sensitive by BLM and CDFW. An assessment was conducted for the Study Area and surrounding area to determine the presence of suitable roosting and foraging habitat for bat species known from the region. Some bat species, such as the leaf-nosed bat, range throughout the southwestern U.S. However, other species, including the spotted bat, western mastiff bat, and the big free-tailed bat, have ranges that extend into Mexico and South America. Roosts and natal colonies are typically located in protected or sheltered areas, such as rocky outcrops, cliffs, caves, mines, and abandoned buildings. According to the CNDDB, there are four records for California leaf-nosed bat within five miles of the Project site and one record each for pallid bat, Townsend's big-eared bat, hoary bat, Arizona Myotis, and cave myotis (CDFW 2016). Records for two species, California leaf-nosed bat and cave myotis, were recorded over a large polygon that includes portions of the Project site; however, these records are from a mine in the Mule Mountains located southwest of the Project site. There is predicted occupied habitat for the pallid bat, Townsend's big-eared bat, and California leaf-nosed bat present onsite in the DRECP suitable habitat model.

Survey Results

Bat surveys consisted of acoustic monitoring within the Study Area and roost surveys of sites in the vicinity of the Study Area. A summary of methods and results for these survey efforts follows.

Acoustic Monitoring

Acoustic monitoring was conducted for three nights in May 2013 to sample bat species utilizing the Study Area. Twelve Anabat II monitors were deployed at sites with different vegetative components to identify bat species and document activity levels (Figure 3.4-9). Eleven monitors were located within the Project site; one monitor (i.e., Site 4) was located along a wash just outside the Project site. Half of the monitors had standard microphones and half had low frequency microphones with higher sensitivity to sounds in the audio range [4.5 to 20 kilohertz

(kHz)]. This enhances recording of certain bat sounds (e.g., pallid and California leaf-nosed bat social calls, western mastiff and other free-tail bat calls) along with insect and bird calls.

Evaluation of acoustic monitoring results identified at least seven bat species: pallid bat (*Antrozous pallidus*), canyon bat (*Parastrellus hesperus*), California myotis (*Myotis californicus*), cave myotis (*Myotis velifer*), Mexican free-tailed bat (*Tadarida brasiliensis*), pocketed free-tail bat (*Nyctinomops femorosaccus*), and Western mastiff bat (*Eumops perotis*)) yielded multiple diagnostic call sequences. For 50 kHz Myotis sequences (calls ending at this frequency), two species (i.e., *Myotis californicus* and *Myotis yumanensis*) are often not distinguishable. California myotis is far more common in open desert habitats distant from surface water. Therefore, 50 kHz Myotis sequences were interpreted to be the California myotis. A small sample of 40 kHz Myotis sequences was obtained at four monitors. There are two *Myotis* in the region that produce similar calls at this frequency: the Arizona myotis (*Myotis occultus*) and the cave myotis. Given the low likelihood of occurrence of the Arizona myotis and the proximity to occupied cave myotis roosts, it was concluded that 40 Khz Myotis sequences were interpreted to be the cave myotis. Four of the acoustically detected species are considered special-status species: pallid bat, cave myotis, Western mastiff bat, and pocketed free-tailed bat. Canyon bat, California myotis, and Mexican free-tailed bat do not have a special-status species designation; therefore these three species were not included in Table 3.4-1.

In addition to the Yuma myotis and California myotis discussed above, another 2 bat species have the potential to occur at some time of the year, including western yellow bat (*Lasiurus xanthinus*), and hoary bat (*Lasiurus cinereus*). The western yellow bat and the hoary bat do not have any special-status species designations, but nonetheless appear on the California Special Animals List (CDFW 2016). Of the bats not detected during the acoustic surveys that have a potential to occur within the Study Area, the most likely species is the California leaf-nosed bat that roosts close to the Study Area. This species can hunt without emitting echolocation signals, relying solely on vision and prey-produced sounds. Therefore, the species may not be detected during acoustic monitoring.

Roost Surveys

Roost surveys were also conducted in May 2013 to examine the mines in the mountains adjacent to the Project site during the day and at night for evidence of bats and guano. Two mines, the Uvanum Mine and McCoy #3, in the southern McCoy Mountains (located approximately 4.4 miles northwest of the Study Area) had previously been identified by Patricia Brown, Ph.D. as supporting California leaf-nosed bat maternity colonies. These mines were gated with bat compatible closures by BLM in 2011. These mines were monitored on May 8 at dusk by surveyors with night vision equipment to obtain accurate exit and entry counts of bats and acoustic records with additional Anabat detectors. California leaf-nosed bats and pallid bats were recorded at these mines during monitoring. The Uvanum Mine is closest to the Study Area. Thirty-three bats exited and 26 entered this mine in the hour after dark. Seventy-one bats exited and 44 entered the McCoy #3 mine to the west of the Uvanum Mine, in another drainage. Non-resident bats may enter a mine to "night-roost", so the exiting and entering bats may not be the same individuals or species.

Using topographic maps and Google Earth images, a ground reconnaissance was conducted of possible mine features on the north end of the Mule Mountains (1.8 miles south of the Study Area). No underground features that could shelter bats were discovered. The closest known bat

colony in the Mule Mountains is the Hodge Mine (also referred to as Stonehouse; situated 3.4 miles south of the Study Area. This mine has been a research site for Dr. Brown since 1976 and contains the largest winter colony of California leaf-nosed bats (*Macrotus californicus*) in the United States, as well as a maternity colony. It is also one of four maternity colonies for the cave myotis (*Myotis velifer*) in California. A total of 3,348 bats exited this mine from five portals on the evening of May 9, 2013.

3.4.1.2 Wildlife Movement

Wildlife movement corridors, particularly in desert ecosystems that have relatively limited and patchy distribution of resources, are typically linear in nature. Wildlife movement corridors tend to follow geographic features, such as drainages or patches of vegetation that provide protective cover for animal species that move between resources (e.g., water, foraging areas, breeding grounds, etc.). The Study Area could be used by a variety of wildlife species for movement purposes. Wildlife movement activities typically fall into one of three movement categories: 1) dispersal (e.g., juvenile animals from natal areas, or individuals extending range distributions); 2) seasonal migration; and 3) movements related to home range activities (foraging for food or water, defending territories, or searching for mates, breeding areas, or cover).

The DRECP identifies wildlife corridors and linkages for use in evaluating the application of CMAs for the protection of biological resources. Figure D-1 of the DRECP identifies a desert linkage network for landscape wildlife linkages, Figure D-2 identifies multi-species linkages and ACEC boundaries within the East Riverside DFA, and Figure D-16 identifies Tortoise Conservation Areas and Linkages. The Project area is not situated within any of these linkages.

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3.5 Cultural Resources

A cultural resource is a location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. Cultural resources include archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups, e.g., "traditional cultural property" (BLM 2004). At both the state and Federal levels, cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance (Office of Historic Preservation 1995, National Park Service 1990). State and Federal laws, however, use different terms for significant cultural resources. California state law discusses significant cultural resources as "historical resources," defining significant resources as those resources which have been found eligible for listing in the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP), as applicable. Federal law uses the terms "historic properties" and "historic resources."

Prehistoric resources are associated with human occupation and use prior to sustained European contact. These resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American human behavior. In California, the prehistoric period began over 12,000 years ago and extended through the 18th century until 1769, when the first Europeans permanently settled in California.

Ethnographic resources represent the heritage of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, cremation sites, shrines, or ethnic neighborhoods and structures.

Historic-period resources, both archaeological and built environment (i.e., structures, buildings, or other built features) begin with those associated with early European and Euroamerican exploration and settlement of an area and the beginning of a written historical record, and continue to the evidence of activities dating to 50 years before the present. They may include archaeological deposits, sites, structures, earthworks, traveled ways, artifacts, or other material remnants of human activity.

The term "historic property" is used for the purposes of §106 of the National Historic Preservation Act of 1966 (NHPA), and is defined in 36 CFR Part 800, the implementing regulations for §106, as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the [NRHP] . . . , [which] includes artifacts, records, and remains that are related to and located within such properties" (36 CFR §800.16(*l*)(1)). The term also includes "properties of traditional religious and cultural importance to an Indian tribe . . . that meet the National Register criteria" pursuant to 36 CFR §60.4 (36 CFR §800.16(*l*)(1)). For definitions of other terms used in this section, please refer to Appendix B. Historic properties are categorized as buildings, sites, structures, objects, and districts for the purposes of complying with §106.

A BLM Class III Archaeological Survey Report has been completed by Statistical Research, Inc. (SRI), in support of this PA/EIS/EIR (Lerch et al. 2016 and Lerch 2017, provided in Appendix P). In addition, the BLM has initiated consultation with Native American tribes to identify places

of traditional religious and cultural significance that may otherwise be left unidentified by these studies. Chapter 5 provides a discussion of the BLM's tribal consultation process.

3.5.1 Environmental Setting

Archaeological resources were inventoried and the results are described for the proposed Project and alternatives. This section describes the affected environment and regulatory setting for cultural resources. It also summarizes the results of a literature review, records searches, archaeological resource and historic built environment survey, and communications with Native American representatives regarding cultural resources that could potentially be impacted by the Project.

The information in this section is based on the Class III report generated by SRI for DQSP, the previously approved EIS for the MSEP (north of the DQSP) (BLM 2012b), and the Class III report created by AECOM also for the MSEP (Jordan et al. 2011).). In April 2018, SRI and BLM conducted archeological testing on three cultural resources to determine if there are subsurface deposits. On May 2, 2018, the BLM conducted additional Class III surveys near the Colorado River Substation (CRSS).

3.5.1.1 Geological Setting

The Project is located in the southern east-west-trending valley pass on the Palo Verde Mesa. The mesa is a series of ancient raised river terraces associated with the Pleistocene course of the lower Colorado River. The relatively flat topography of the mesa slopes gently down from the northwest to the southeast and is bounded by the McCoy Mountains to the northwest and the Mule Mountains to the southwest. The valley pass, through which modern I-10 was built adjacent to the Coco-Maricopa Trail (CA-RIV-53T), was an important prehistoric transportation corridor from points east of the Colorado River to the Pacific Coast.

The Palo Verde Mesa is part of the northern extent of the Colorado Desert, a subdivision of the greater Sonoran Desert. Encircling the northern Gulf of California, the Colorado Desert spans portions of northwest Mexico, southwest Arizona, and southeast California (Schaefer, 1994a). It is a subtropical desert that is periodically influenced by tropical weather conditions, including massive seasonal rain storms known locally as monsoons.

The Colorado River, which forms the border between California and Arizona, originates in the Rocky Mountains and flows generally south through the southwestern Unites States and into the Gulf of California, in Mexico. As the river flows south from the Colorado Plateau, it enters a shallow valley where it forms a broad floodplain (Jahns 1954) that can reach up to 18 km in width. Much of the floodplain has been converted to farmland, but before recent development, the area formed a large wetland that would have been home to a variety of flora and fauna. The river bottom also was used by the late prehistoric and ethnographic inhabitants of the region to practice floodplain agriculture that focused on maize, beans, squash and gourds, and melons, among other plants (Castetter and Bell 1951:97–130).

At the beginning of the Holocene, the Colorado River retreated to the east and began to cut deeply into the surrounding sediments. Periodically, though, the river dramatically flooded, changed course, and flowed into previously dry inland areas. After large flood episodes, water from the Colorado River was occasionally impounded and diverted into the Salton Trough,

creating a vast inland freshwater lake in the area of the historical Lake Cahuilla. Impounded waters from the Colorado River would continue to flow into the Salton Trough for years or even centuries until another major flood event sufficiently reworked the river delta at the Gulf of California to allow the river to resume its typical course. At these times, numerous ethnically and linguistically distinct Native American groups converged on the newly formed lake. Some of the intermittent prehistoric use of the Palo Verde Mesa likely dates from these episodes of inland lake activity.

3.5.1.2 Paleoclimate

Identifying the kinds and distribution of resources necessary to sustain human life in an environment and the changes in that environment over time is central to understanding whether and how an area was used during prehistory and history. During the time that humans have lived in California, the region in which the Project is located, the Colorado Desert, has undergone several climatic shifts. These shifts have resulted in variable availability of vital resources, and that variability has influenced the scope and scale of human use of the vicinity of the site. Consequently, it is important to consider the historical character of local climate change, or the paleoclimate, and the effects of the paleoclimate on the physical development of the area and its ecology.

The Pleistocene (1.8 million to 10,000 years ago), and the Holocene (10,000 years ago to the present) environmental record from the Mojave Desert provides a model for the Colorado Desert. Summaries of the development and changes in vegetation in the Mojave Desert and surrounding region during these periods are provided by Grayson (2011, pp. 153-164, 217-219, 230, 239-242), Spaulding (1990, as cited in CEC, 2010), Tausch et al. (2004, as cited in CEC, 2010), and Wigand and Rhode (2002, pp. 332–342, as cited in CEC, 2010). All note the vegetation history of this region has been primarily studied by analysis of plant macrofossils contained in prehistoric packrat middens. Pollen studies from this region are largely lacking.

In general, Tausch et al. (2004, fig. 2.3; see also Wigand and Rhode, 2002, pp. 321–332, as cited in CEC, 2010) note the Early Holocene (8500 to 5500 BC) in the Mojave Desert was characterized by a post-glacial warming trend, accompanied by periods characterized by variable moisture. After about 10,000 years ago, temperatures increased overall, but summer temperatures remained cooler than present. There is some evidence of an increase in precipitation at this time, possibly resulting from more frequent and intense El Niño patterns (Spaulding 1995). First proposed by Antevs (1948), the reconstruction of an arid middle Holocene period (circa [ca.] 7,000–4,000 B.P.) is now supported by packrat midden, geomorphic, and pollen data (Byrne et al. 1979; Hall 1985; Holliday 1989; Mehringer 1986; Spaulding 1991). Although the middle Holocene was clearly warmer and more arid than present, the various lines of evidence suggest that the period was one of high climatic variability rather than unremitting heat and drought (Grayson 1993). Evidence from the late Holocene (after ca. 4000 B.P.) indicates at least three distinct climatic episodes that would have affected humans living in the desert. Studies of macrofossils from packrat middens and evidence for extended lacustral intervals in the Mojave Desert (Drover 1979; Enzel et al. 1992; Smith 1979; Wells et al. 1989), suggest that the period between circa 4000 and 2000 B.P. was generally cooler and notably wetter than present. Known as the Neoglacial, this period in the Mojave Sink region was marked by extensive desert lakestands supported by the flooding of the Mojave River, likely resulting from increased precipitation in the Transverse Ranges.

The Medieval Climatic Anomaly (MCA), which extended from about 1,200 to 700 years ago, was marked by generally warm temperatures and punctuated by extreme, extended droughts from A.D. 890 to 1100, and from A.D. 1210 to 1350 (Stine 1994). In the Mojave Desert, packrat middens provide evidence of effectively drier conditions associated with increased temperatures. Presently, there are no published records of increased spring activity or desert lake high stands throughout the Mojave during this period (Jones et al. 1999). In the Colorado Desert, though, Waters (1983) reports evidence for high stands of Lake Cahuilla during much of this interval. The sustained high water in Lake Cahuilla may have mitigated the effects of the droughts on local populations, although the Palo Verde Mesa surely would have been very dry.

The generally arid conditions of the MCA reversed sharply about 600 years ago, marking the beginning of the Little Ice Age (Grove 1988). A variety of data from the Mojave Desert indicate both lower temperatures and increased winter precipitation during this period. Cooler temperatures are suggested by the expansion of cold-loving blackbrush scrub into lower elevations at this time. Evidence for extended lakestands in the Mojave Sink (Enzel et al. 1989, 1992) indicates enhanced precipitation in the Transverse Ranges. Essentially modern climatic conditions only became established in the region about 150 years ago.

3.5.1.3 Prehistoric Background

The following overview of Colorado Desert culture history is a synthesis based on various studies. Importantly, it is grounded in the pioneering works of Malcolm J. Rogers and his studies on Colorado and Sonoran Desert archaeology (Rogers 1939, 1945, 1966). Since the early works of Rogers, other prehistorians have added new data and interpretations, refining understanding of the region's cultural sequence (Crabtree 1981; Schaefer 1994a; Schaefer and Laylander 2007; Warren 1984; Wilke 1976). The general cultural sequence for the Colorado Desert can be divided into four distinctive periods and extends back in age for a minimum of 12,000 years. The dates, provided here, represent estimates based on radiocarbon determinations corrected for changes in atmospheric carbon. They are shown as calibrated (cal) ages with calendar dates represented in years (B.P.) or the equivalent dates identified as B.C. or A.D.

Paleoindian Period (San Dieguito) (12,000 to 7,000 before present [BP])

The Paleoindian period experienced profound environmental changes, as the cool, moist conditions of the Pleistocene (from 2.5 million to 12,000 years ago) gave way to the warmer, drier climate of the Holocene (from 12,000 years ago to present). The earliest record of habitation in eastern Riverside County occurred during the Paleoindian Period. Locally, a fluted point base was recorded on the western bajada of the McCoy Mountains in 2012. Western Fluted Points post-date most eastern fluted points by several centuries but are likely at least 12,000 years before present. A result of the Solar development near Ford Dry Lake yielded several Lake Mojave Points (BLM 2010). In the Pinto Basin (Joshua Tree National Park) Elizabeth Campbell documented a fluted point base in 1935 (Campbell 1935). In the Colorado Desert, at the Salton Sea Test Base sites situated on the bed of ancient Lake Cahuilla some 30 m below sea level, a flaked stone assemblage was discovered that included points and artifacts diagnostic of the Early Holocene era and typological affiliation with the San Dieguito or Lake Mojave Complex. Two eccentric crescents and a Lake Mojave dart point, identified during surveys of this area, attest to early cultural activities in the region (Apple et al.1997; Wahoff 1999). Significant environmental changes, synchronous with broad shifts in regional temperature, occurred in the post-Pleistocene,

with only minor changes in precipitation. Increased runoff from glacial melting resulted in the infilling of valleys and basins forming streams, marshes, and lakes. Initially these large bodies of water supported great amounts of biota, including big game animals (e.g., deer, pronghorn antelope, and bighorn sheep).

The San Dieguito archaeological assemblage consists exclusively of flaked stone materials, including percussion-flaked core and flake tools, crescents, domed and keeled choppers, planes, and scrapers. Other artifacts within the assemblage include less intensively flaked spokeshaves; leaf-shaped points; and large, stemmed lanceolate dart points of the Lake Mojave and Silver Lake types. Groundstone artifacts are characteristically rare or completely absent from the assemblage (Warren and Crabtree 1986). Studies of the sources of toolstone found at sites dating to this period attest to a pattern of relatively high residential mobility. Aboriginal settlements during this time coalesced around bodies of water and were especially frequent in association with large inland lakes. These aboriginal campsites exhibited a wide array of formal stone implements thought to be reflective of a specialized focus on hunting. Studies of the faunal remains discovered in prehistoric sites dating to this timespan in the Mojave Desert have revealed a broader spectrum subsistence pattern, including the procurement of many smaller game animals. Hence, lifeways during this time may have included a focus on highly ranked resources such as large mammals, but with the additional focus on a variety of small game.

Archaic Period (Pinto and Amargosa) (7,000 to 1,500 BP)

The climatic patterns of the late Paleoindian period continued into the early Archaic period. During this period, the climate was wetter than it is currently across much of the desert west (Antevs 1955; Grayson 1993; van Devender and Spaulding 1979). Regional populations during this era were generally expanding, leading to a diversification and intensification of subsistence, and regional communication and exchange networks were becoming well established. Groundstone tools, largely absent during the earlier occupation periods, become common during the Archaic. Archaic sites are typically identified by their diagnostic dart points (classified as members of the Pinto, Elko, and Gypsum series) and their lack of the pottery found only with later prehistoric sites (Crabtree 1980; Rogers 1939). Pinto points have been the subject of intense study, and much has been made concerning their typological affinities and dating. Pinto points have, until recently, been thought to date from 8000 to 4000 cal. B.P. However, recent research suggests that at least two traditions, an early and later dating expression, are represented and evidenced by robust and gracile versions of these point forms (Basgall and Hall 2000). It is also probable that Pinto points do, in fact, have considerably greater temporal overlap with Western Stemmed Series (Lake Mojave and Silver Lake) points and date, in part, to a much earlier time period than originally conceived. The latter supposition is based largely on the nearly identical suites of obsidian hydration readings made on Pinto and Western Stemmed Series (Lake Mojave and Silver Lake) points in the Mojave Desert (Gilreath and Hildebrandt 1997).

Late Prehistoric (Patayan Complex) (1,500 to 150 BP)

A period of even more persistent drought began by 1,500 years ago, and conditions became significantly warmer and drier (Jones et al. 1999; Kennett and Kennett 2000). The dry period continued until 750 years ago (Spaulding 2001).

Prehistoric sites dating to the Late Holocene era in the Colorado Desert are more frequently represented during the Late Prehistoric (also known as Yuman, Patayan, Hakataya) than any other time period. This period is marked by significant changes in the archaeological record, including shifts in subsistence practices and settlement patterns. Paddle and anvil pottery and floodplain farming first appear during this era, and it is believed that both practices were introduced either directly from Mexico or indirectly via the Hohokam, situated on the Gila River, in the American Southwest (McGuire and Schiffer 1982; Rogers 1945; Schroeder 1975, 1979). The bow and arrow is also introduced during this time, and is evidenced by Cottonwood and Desert Side-notched type points. Burial practices change from the former practice of inhumation to cremation. Flaked stone tools during this era are more perfunctory—being quickly fashioned and discarded after casual use—a radical shift from the former tradition of crafting more formalized and finely finished bifacial tools.

It is important to recognize that there is a definite correspondence between the indigenous Native Yuman cultures of the region and the archaeological complex known as the Patayan. The latter include the historically attested peoples identified as the Quechan, Mojave, and Halchidoma. Although not affiliated with the Yuman linguistic group, the Desert Cahuilla (Takic subgroup) and the Chemehuevi (Numic subgroup) are members of the large and widespread Uto-Aztecan language group, and are also part of this same cultural landscape. The Patayan cultural materials and archeological assemblage are recognized as directly ancestral to the contemporary Native American cultures of the region.

Harold S. Colton (1945) attempted to apply the direct historical method to define the cultural pattern for the Patayan region. Using surface collections of pottery, he suggested that the historical practices of intense warfare known for the area extended back into the late prehistoric. Colton opined that this situation had been fostered by high population concentrations of agriculturalists tied to the Colorado River and confined by the adjacent arid environment. Rogers' archaeological work in the area (1936, 1945) introduced an orderly cultural history and artifact typology to the Colorado Desert, but conflated the late prehistoric record with a single linguistic grouping, tying it to the moniker Yuman.

Expanding on Rogers' Yuman pattern, Albert H. Schroeder (1961) introduced the concept of the Hakataya. Schroeder's efforts linked Rogers' ceramic types with historically identified ethnolinguistic groups correlated with specific subdivisions of the Hakataya pattern. The effort has been criticized as being too all-inclusive and for overlooking the mobility patterns characteristic of the region (McGuire and Schiffer 1982). Yet the Patayan tag seems to have re-emerged with the publication of Hohokam and Patayan (McGuire and Schiffer 1982), which provides a critical review and history of the confusing terminology and varied cultural concepts applied to the region. Michael R. Waters (1982a, 1982b) used the Patayan label for his revisions to the local ceramic typology and chronology, and based his interpretations on Rogers' unpublished notes and a review of the artifact collections curated at the San Diego Museum of Man.

By the late Prehistoric period there appears to have been a transition to more mobile patterns of travel and trade between the Colorado River and Lake Cahuilla (Pendleton 1984). Long-range travel for resource procurement and trade resulted in a system of trails through the Colorado Desert. The increased mobility along the trail system allowed the opportunity for interaction between neighboring tribes. As the Spanish began to explore the area, native trails and trade routes were used and expanded.

Early research in the area noted recognizable trail types, including major long distance, minor long distance, and subsidiary trails between settlements and resource areas (Rogers 1941). McCarthy (1993) defines two types of trails, primary and secondary. Primary trails are based around a destination that is fixed on the landscape, such as a spring. A vital trail within the Project vicinity is the Coco-Maricopa Trail. One of the segments is just north of the Project area (Lerch et al. 2016). This heavily traveled east-west trail connected the Los Angeles Basin with the Colorado River at Palo Verde Valley and then continued east to Maricopa villages on the Gila and Salt rivers in the Phoenix vicinity. The California portion of the route went from the vicinity of modern-day Blythe, south through the Palo Verde Valley area, then curved south around the Palo Verde Mountains. This route then headed west along Milpitas Wash and Arroyo Seco along the north side of the Chocolate Mountains. It then passed south of the Orocopia Mountains and into the Coachella Valley and west over San Gorgonio Pass into the Los Angeles Basin. The portion of the trail that went east from the Coachella Valley to Arroyo Seco is followed today by what is known as the Bradshaw Trail. Garcés, writing in 1774, mentioned that the Halchidhomas in the Palo Verde area traded continuously with groups on the Pacific coast, and the trip took four days (Bolton 1930:242; Forbes 1965:109). Captain Jose Romero used the trail in the early 1820s to reach the Colorado River (von Till Warren and Roske 1981:2). Trade goods transported along the trail included gourd rattles and tobacco, and villages along the trail included those at Blythe, Mecca, Indio, Indian Wells, Palm Springs, White Water, and Cabazon (Norris and Carrico 1978:7). As noted in Bean and Toenjes (2010), the physical location of the entire Coco-Maricopa Trail is not known and only a few short segments have been recorded, based on earlier surveys (Johnston and Johnston 1957).

Ten prehistoric or historic trails are documented within the proposed Project solar facility site or within the vicinity of the Project. Three prehistoric trails fall within the Project boundaries; these include two previously documented trails, CA-RIV-343 (P-33-000343) and CA-RIV-772 (P-33-000772) and newly recorded CA-RIV-12012. The trails typically measured 15 to 30 cm wide and were identified by compacted sediment. CA-RIV-343 goes from the Palm Springs area to the Mule Mountains. It crosses through the southwestern portion of the Project area and heads toward the Mule Tank Discontiguous Rock Art District. CA-RIV-772 is visible on the south side of the Project. It leads to an intaglio site, P-33-000773, and is thought to be a part of the Coco-Maricopa Trail system. The new trail segment, CA-RIV-12012, is located in the central portion of the Project. It is not yet associated with any landscape features or artifacts (Lerch et al. 2016). The Xam Kwatsan Trail traverses south from the Project area along the eastern slopes of the Mule Mountains. This trail is in the process of recordation. Ethnographic studies within the Project area have identified trails as having an important economic and spiritual use in both prehistoric and historic times (Bean and Vane 1978).

Other trails lead toward canyons containing temporary water sources. In addition to water sources, other resource areas would include lithic quarries and assay areas. A line of pebble terraces line the southern flank of the McCoy Mountains. Several extremely large prehistoric lithic sources and assay sites have been recorded in these terraces. Trail segments between these sites have been documented. McCarthy speculates shorter trail segments in the area of McCoy Wash were used to connect specialized activity areas within larger habitation areas (McCarthy 1993).

This trail network connected not only major pilgrimage locations, but also villages, springs, and important resource collection areas. The trails in the McCoy Wash area were believed to connect

the region to important spiritual locations north of the Maria Mountains (near the Blythe Intaglios); the Colorado River; pilgrimage locations in the Mojave Valley and near Yuma; and villages throughout the region, including village sites in the study area (see above) and elsewhere in the Chuckwalla Valley.

The Salt Song Trail is considered to be the path to the afterlife used by the Chemehuevi, Southern Paiute, and Hualapai. The Salt Song Trail is described in the Salt Songs, which are a series of songs sung at funerals. According to WCR (2003:71), the Salt Songs tell of a flock of many species of birds traveling around the territory of the Southern Paiute, including areas in Nevada, Arizona, and California. Its alignment is described as:

> The trail goes southwest through the Las Vegas Valley, along the Spring Mountains to the vicinity of Indian Springs, and then proceeds through Pahrump and Ash Meadows. It turns back south near Eagle Mountain, and goes down the Amargosa River past Shoshone, turns again at Dumont Dunes, and goes up through Baker and Soda Lake, and passes south to the Providence Mountains. It then proceeds to Twenty-nine Palms and the San Bernardino Mountains, turns east toward the Colorado River, and crosses into Arizona south of Blythe [WCR 2003:71].

The path of the Salt Song Trail connects many of the culturally and spiritually relevant places throughout the Chemehuevi territory (AITC 1999:E-47). The Salt Songs take an entire night of mourning to recite and the path of the songs places the Spring Mountains at approximately the halfway point, with Las Vegas occurring around midnight, Parker by early morning, and the entire trip ending by sunrise. It is noted that it is important for the Salt Songs to end by sunrise and that the songs can be truncated to serve this purpose, but only by those singers who are familiar with the songs, the trail, and the landscape (Laird 1976:17).

3.5.1.4 Ethnographic Background

A number of distinct Native American groups have historical and cultural ties to the Project area and vicinity. The Project area is located near the territories of several neighboring Native American groups, as described in Kroeber (1925). The Chemehuevi, Cahuilla, Mojave, Quechan, and Halchidoma may have all ranged into the Project vicinity. The following brief synopses provide overviews on the ethnology for these ethnolinguistic groups.

Halchidhoma

It is difficult to find studies focused exclusively on the Halchidhoma, as they are typically addressed in scholarly studies focusing on other Colorado River and American Southwest Tribes traditionally occupying nearby areas. The most extensive discussion is in Spier's (1933) ethnographic treatment of the Maricopa. Spier's primary consultant was a man named Kutox, who was himself of Halchidhoma ancestry and was 83 years of age during the 1929–1930 field season of anthropological fieldwork. Similarly, Harwell and Kelly's synthesis on the Maricopa (1983) provides some further limited, yet useful, information on the Halchidhoma. Other, more perfunctory and scattered, information on the Halchidhoma can be found in the works of Bean and Vane (1978), Castetter and Bell (1951), Coues (1900:423–430), Dobyns et al. (1963:112), Drucker (1941), Kelly (1972), and Kroeber (1925:802).

Juan de Oñate visited the Halchidhoma and recorded the name of this Native American group when he traveled to the eastern bank of the lower Colorado River near the confluence with the Gila River. He identified them as Halchedoma or Alebdoma (Bolton 1916:276; Ezell 1963; Hammond and Rey 1953). Garcés uses the name Halchedunes, Galchedunes, and Chidumas (Bolton 1930; Coues 1900). Miscopied forms of their identifier are Alebdoma (Hammond and Rey 1953) and the identification made by Hodge under the heading Alchedoma (Hodge 1907–1910). The Quechan name for the group is similar to the Halchidhoma self-identifier and perhaps means "those who turned or faced a different direction."

Bean and Vane (1978) identify the central Halchidhoma with the name Panya. Kahwan families, taking up residence in association with the Halchidhoma, north of the Quechan, self-identify with the Halchidhoma (Kroeber 1925:801). In the recent historic era, ca. 1980, the Lehmi community within the Salt River Reservation (especially those living at Laveen) are of Halchidhoma ancestry. These are the people referred to as the Lehi, Western Maricopa, or pipakves (Kelly 1972). They prefer to be identified as and call themselves pipa (meaning "people" in their Yuman language).

The Halchidhoma dialect is grouped with the River Yuman branch of the Yuman-Cochimi linguistic family. Three languages form this branch: Mojave, Quechan, and Maricopa. The Maricopa language grouping includes the dialects of Halchidhoma and Kavelchadom. Both of the latter dialects are now extinct. The Yuman linguistic group includes 10 distinct languages and other dialects, with native speakers living in Baja California, northern Sonora in Mexico, Southern California, and western Arizona. Yuman languages are identified by many linguists as members of a larger Hokan linguistic family.

Although no longer inhabiting the study area, the Halchidhoma lived along the Colorado River between Blythe and Needles, California, and above Parker, Arizona, until about 1825. Oñate identified eight villages on the Colorado River, south of the Gila River, with 160 homes and a population at the northernmost village alone approximating 2,000 people (Kroeber 1925:802). Relations were always tense and sometimes explicitly adversarial. The Quechan and Mojave drove out the Halchidhoma, forcing them to migrate to the east and replacing them with the Chemehuevi (Kroeber 1925:594). The Halchidhoma ultimately found good company with the Maricopa at the confluence of the Salt and Gila Rivers in southern Arizona (Kroeber 1925:801; Harwell and Kelly 1983:71).

Similar to other River Yuman groups who lived along the lower Colorado River, the Halchidhoma were horticulturalists who dry farmed and also followed a supplemental foraging subsistence pattern. Their hamlets were large habitation spaces located on river terraces elevated above the floodplain. Villages were regularly relocated when the river changed course. Plantings were made after the floodwaters receded, and river terrace plots were seeded into 2- to 3-acre parcels.

When floods were at their peak, areas of the Palo Verde Valley and Cibola were inundated. As the flood waters declined during the summer, seed crops could be planted. Maize, tepary beans, black eyed beans (cowpeas), squash, and pumpkins were standard foodstuffs. Mesquite and screwbean harvests supplemented the horticultural efforts. Dense groves of these trees appear to have been characteristic of the Colorado River riparian forests. Mesquite pods could be eaten fresh from the tree but more commonly were harvested in July or gathered after falling to the

ground. The pods were then milled into flour and processed using wooden mortars and pestles of wood or stone (Castetter and Bell 1951; Gifford 1931).

Seeds of the ironwood (*Olneya tesata*) tree were also regularly gathered. These seeds were removed from the tree, parched, ground lightly on a milling slab, and leached to remove the bitter taste. The ironwood seeds were also roasted and made into a meal that was fashioned into thin loaves and baked. Ironwood seed harvests were conducted during the fall. Also targeted were the seeds of the Palo Verde (*Parkinsonia microphylla*). These seeds were processed in a similar fashion to that of the ironwood plant. Neither plant was considered an especially desirable food source. However, both were drought-tolerant species that inhabited areas away from the river. Hence, these economic plants could have been especially important for providing food in years when the Colorado River crops failed.

The Halchidhoma represented another example of the lower Colorado River Yuman tribe that was known for their habits of extensive long-distance travel and trade. Anthropologists have documented that the Halchidhoma traded with the Cahuilla, Hualapai, Papago, and Pima people, and partnered with the Maricopa (Bean and Vane 1978). One of the more prominent travel corridors was known as the Coca–Maricopa Trail; that footpath leads west and southwest from the Colorado River near Blythe and runs to the Pacific Coast. (Dobyns et al. 1963:109). The Halchidhoma received Hopi cotton blankets from the Hualapai of northern Arizona and traded those to the native peoples along their travel routes.

Warfare was a prominent factor for the Halchidhoma, and frequent conflicts occurred with neighboring tribes (Bean and Vane 1978; Kroeber 1925). An alliance system included the Halchidhoma and, as allies, incorporated the Maricopa, Pima, Hualapai, Havasupai, Serrano, Cahuilla, Paipai, and Ipai. Adversaries to the Halchidhoma were the Mojave, Quechan, Kumeyaay, Chemehuevi, Southern Paiute, Yavapai, and Western Apache (White 1974). The Halyikwamia and Kamias were at times friends or adversaries. Warfare was conducted as a means of recognizing tribal prestige, maintaining religious values, gaining individual honors, and acquiring supernatural power (Kelly 1977:129–131). The opposing war confederations would fight collaboratively against common enemies; this included, at times, the Spaniards.

Today, the Halchidhoma are part of the Salt River Pima–Maricopa Indian community that is recognized as a sovereign tribe and is located in the metropolitan Phoenix, Arizona, area. This reservation is bounded by the cities of Scottsdale, Tempe, Mesa, and Fountain Hills. This Tribal community encompasses 52,600 acres. Two distinct backgrounds and cultures are joined within this single community composed of the Pima: Akimel O'Odham (river people) and Maricopa Xalychidom Piipaash (people who live toward the water). Maricopa is currently spoken by a few hundred of the approximately eight hundred Maricopa living in Arizona. There is a language program in the town of Lehi in the Salt River Pima–Maricopa Indian community, where they refer to the language as "Piipaash" (Golla 2011). Approximately 12,000 acres are under cultivation in a variety of crops, including cotton, melons, potatoes, onions, broccoli, and carrots. Commercial development is reserved along the community's western boundary. The community owns and operates several business interests, including a golf course, financial services, gaming resort, recreational facility, and landfill.

Mojave

There is considerable published material on the Mojave. Primary ethnographic studies rely on the works of Castetter and Bell (1951), Kroeber (1902, 1920, 1925, 1948, 1972, 1974), Spier (1933, 1936, 1953, 1955), and Wallace (1947a, 1947b, 1948, 1953, 1955). An early overview and synthesis can be found in the work of Hodge (1907–1910). George Devereux was a prolific author and student of Mojave Indian culture, and published a number of articles on Mojave belief systems and psychology (Devereux 1937a, 1937b, 1941, 1942, 1948, 1950, 1951, 1956, 1957, 1961). Lorraine Sherer provides academic studies on various aspects of the sociopolitical organization of the Mojave (Sherer 1965, 1966, 1967; Sherer and Stillman 1994). Kenneth Stewart offers some early topical accounts on territory and subsistence, and the most recent overview of Mojave ethnography included in the Smithsonian's encyclopedic Handbook of North American Indians (Stewart 1947a, 1947b, 1947c, 1957, 1965, 1966, 1968a, 1968b, 1969a, 1969b, 1970, 1973, 1974a, 1974b, 1977, 1983a, 1983b). Historical data on the Mojave is reported by Euro-American religious and military men and found in works of Coues (1900), Ives (1861), and Whipple et al. (1855).

Most anthropologists identify this lower Colorado River tribe as either the Mojave or Mohave. The spelling was considered rather important, as the Mojave with a "j" was representative of a people and the Mohave with an "h" designated the geographical appellation. That is no longer the case, and some Mojave people prefer the same spelling as the place name. The name Mojave is derived from the Yuman words for three (homk) and mountain (avi). One of the national identifications was Hamakhava. Contemporary Mojave often refer to themselves as the Aha Makhav (aha meaning "water" and macav meaning "along or beside"); hence the designation "By the River" or Pipa Aha Macav (The People by the River).

The Mojave language is a member of the River Yuman branch of the Yuman-Cochimi linguistic family. The latter includes approximately 10 distinct languages and numerous dialects, and includes speakers from Baja California to northern Sonora in Mexico, and also has affiliated languages represented in Southern California and western Arizona. These Yuman languages are considered by some linguists to be members of a larger Hokan linguistic family. Structurally and lexically, the Mojave language is very similar to Quechan and Maricopa, but different enough to create difficulty in spoken communication between the tribes. The Mojave language has been influenced by long-standing connections with Upland Yuman language speakers, resulting in a sound shift dating to the 19th century (Golla 2011).

Native speakers of the Mojave language can be found in California and Arizona. A little more than 200 fluent speakers were tallied in the year 2000, with about 70 percent of the speakers living in Arizona and the remaining 30 percent living in California. Although the language has been in decline for many years, younger Mojaves are now being taught their ancestral language, and the number of fluent speakers is growing.

Mojave territory, according to the ethnographic literature, included both riverine and inland areas; their riverine settlement area was mainly north of the Bill Williams River up to the present Nevada border. This main area of Mojave occupation extended on both sides of the lower Colorado River from south of Davis Dam to Topock (Stewart 1983b:55). At one time, however, the Mojave also occupied Cottonwood Island farther to the north, and the Chemehuevi and Colorado valleys to the south (Stewart 1969a:257–276). The historical record indicates that the Mojave were encountered by the Juan de Oñate Spanish expedition as far south as the present

Colorado River Indian Reservation in 1604 (Stewart 1969a:257–276) and that they intermittently controlled areas as far south as Palo Verde valley. Sherer (1965:5) describes their settlement area as follows:

> Their river holdings stretched from Black Canyon, where the tall pillars of First House of Mutavilya loomed above the river, past Avi kwame or Spirit Mountain, the center of spiritual things, to the Quechan Valley, where the lands of the Indians began. Translated into present landmarks, their lands began in the north at Hoover Dam and ended about one hundred miles below Parker Dam. Their tribal name was Aha macave, meaning the people who lived along the water (the river).

Three groups made up the Aha-Macav and lived on both sides of the lower Colorado River from Davis Dam in the south to Topock in the north (Kroeber 1925). The northernmost element of the Mojave nation was the Matha lyathum, who lived from Black Canyon south to the Mojave Valley. The Hutto-pah settled in the central Mojave Valley. The Kavi lyathum resided in an area south of Mojave Valley to south of the current city of Needles. In addition to the Mojave occupation of the river, ethnographic accounts and archaeological evidence show that groups of Mojave also occupied interior regions in both California and Arizona for extended periods of time.

There is evidence that the historic distribution of the Mojave did not have great time depth, and that there was much movement and realignment of the various Lower Colorado River tribes. The Oñate expedition encountered the Mojave far south of their historic distribution in 1604 (Stewart 1969a). Stewart (1969a) also noted that the Mojave extended their territory into the Chemehuevi and Colorado Valleys, and, from time to time, even controlled areas as far south as the Palo Verde Valley. Significantly, after the Halchidhoma exited the Parker-Blythe region during the period from 1825 to 1830, the Mojave took up residence in the area, but they ultimately returned to their central homeland in the Mojave Valley (Bean and Vane 1978).

Subsistence for the Mojave was dependent partially on agriculture, with crops such as maize, tepary beans, pumpkins, and melons forming the foundation of their diet. Maize was by far the most principal of all the crops, however, with a family typically clearing between 1 and 2 acres. Silt deposited by river overflows fertilized the fields, and women did most of the planting and cultivation (Stewart 1983b:58). These cultigens were supplemented with the collection of wild native plants, including honey mesquite, screwbean, and sometimes pinyon. Mesquite and screwbean plants produced seed pods that could be eaten green but were typically processed with a wooden mortar and a stone or wooden pestle. The pods could be stored for lengthy periods and the resulting flour was an essential staple within the diet. Additional subsistence activities included hunting and fishing. Spring was considered the preferred time to obtain game animals, and rabbits were taken with traps and communal netting. Fish was the most important protein source for the Mojave, with dip nets, drag nets, traps, and large basketlike scoops used to catch fish out of the river (Kroeber 1925; Stewart 1957). Agriculture remains an important income source for the Mojave in the Fort Mojave and Colorado River Indian Tribes reservations.

Sociopolitical organization for the Mojave consisted of a true chieftainship with hereditary leadership in the male line. Farmland and individual mesquite trees were owned. Tribal organization was quite distinct, and the Mojave identified themselves as a national identity—thinking of their land as a country with an infinite array of places (Kroeber 1925). The total population of the Mojave in 1776 was estimated at 3,000 (Coues 1900) and in 1834 as 4,000

(Whipple et al. 1855). Their numbers dropped dramatically so that by the 20th century, fewer than 1,600 were identified. Contemporary residents of the Fort Mojave Indian Reservation numbered less than 1,477 in the year 2010. However, there were 8,764 residents of the Colorado River Indian Tribes Reservation in 2010, which includes members with Chemehuevi, Navajo, and Hopi ancestry.

The Mojave were noted for their physical stamina and ability as runners, and they participated in an elaborate and formalized long distance trade network. The Mojave exchanged goods as far east as the Hopi town of Oraibi in Arizona and as far west as the coastal Pacific villages of the Chumash. The well-known Mojave Trail was one of their principal trade routes. Mojave men would travel at night, with a typical journey to the coast from the Colorado River taking some 15 to 16 days (Bean and Vane 1978; McCawley 1996).

Mojave religious beliefs were especially well developed and emphasized a basic connection between the natural world and the world of the supernatural. Every Mojave was recognized as having an ability to connect with the spirit world through dreams, and this was the principal means of identifying their personal calling in life. In dream states, the Mojave identified a way of traveling and journeying back through time to the beginning of the world. During these travels, the Mojave would see important places and identify key geographical locations where certain important springs or mountains were situated.

Traditional Mojave religion places special emphasis on the experience of and interpretation of dreams, with dreams affecting nearly all facets of life and behavior. Stewart (1983b:65) states:

> Mohave religion featured an unusual conception of dreaming, which was in fact a pivotal concept in their culture as a whole, permeating almost every phase of Mohave thought and endeavor. All special talents and skills, and all noteworthy successes in life, whether in warfare, lovemaking, gambling, or as a shaman, were believed to be dependent upon proper dreaming.

Oral traditions of the Mojave people are generally rich with detail, with mythical occurrences commonly associated with identifiable places and landmarks. Mojave stories typically recount journeys and/or the transformation of mythical persons into animals or landmarks. Many stories are part of traditional song cycles, and the landmarks identified in the stories include those within traditional Mojave territory as well as places in the surrounding region (Kroeber 1925:756). This strong identification with the landscape of traditional Mojave territory continues today.

Additionally, Mojave tradition involves the naming of clans. Clan names were given by Mutavilya, The Creator, based on aspects of the natural world, including (but not limited to) the sun, rain, small birds, the coyote, prickly pear cactus, and the frog. According to oral tradition, each clan went in different directions from Avikwame (Spirit Mountain) after receiving their name. Each clan has a song commemorating the journey and various encounters experienced during that journey.

The Mojave successfully resisted Spanish attempts at colonization and maintained traditional lifeways and political systems until the U.S. military gained control of the area in the 1850s. Subsequently, many Tribal members relocated to an area south of Parker in 1859. Additional Mojave settled there when the Colorado River Indian Tribes Reservation was founded in 1865. Many Mojave, however, remained in Mojave Valley. The Fort Mojave Reservation was founded there in 1870.

Today, many of the descendants of the indigenous Mojave reside on or near one of two reservations located on the Colorado River. The Fort Mojave Indian Reservation includes areas of California, Arizona, and Nevada. The reservation covers 42,000 acres, with its headquarters in Needles, California. Two Tribal casinos are operated on the reservation, and there are also a variety of recreational facilities and a resort.

The Colorado River Indian Tribes Reservation is composed of land in California and Arizona and is shared by the Mohave, Chemehuevi, Hopi, and Navajo nations. This reservation includes almost 300,000 acres of land and has business interests centering on agriculture, a casino, outdoor recreation, and light industry. The original Colorado River and Fort Mojave reservations were established in 1865 and 1870, respectively. Although the four combined groups are united within the Colorado River Indian Tribes Reservation and act as a single geo-political unit, each Colorado River Indian Tribe continues to maintain and observe its individual traditions, distinct religions, and culturally unique character.

Quechan

In a report to the Secretary of War relating to the challenges of creating Fort Yuma, Heintzelman (1857) provides some slight ethnographic information on the Quechan. However, Trippel's (1889) accounts form the earliest extensive treatment of Quechan lifeways, capturing the manner of Native American culture at the close of the 19th century. Forde (1931) presents the single most authoritative description of precontact Quechan culture by an anthropologist but lacks discussion of reservation life in more recent times. Bee (1963, 1967, 1970, 1981, 1982, 1983,) provides information on Quechan kinship organization, social and cultural changes, Tribal politics, and the impact of government programs on the Native American community. Most recently, Bee (1983) provides an updated overview and synthesis in a chapter for the Southwest volume in the Smithsonian's Handbook of American Indians. Castetter and Bell (1951) provide a thorough treatment of the horticultural methods and specific cultigens within the domain of Yuman agriculture.

In the 1940s, Halpern (1942, 1946, 1976, 1980, 1984, and 1997) conducted research with the Quechan, visiting their settlements and assembling further information on their language and kinship terminology. Returning in the 1970s, he amassed more data, specifically gathering oral history and material on folklore. Historical accounts by Spanish explorers and religious figures provide short accounts of traditional Quechan culture. The most detailed of these is the material provided by Pedro Font (1951). Fortunately, a significant number of these early historic accounts have been reassembled in a recent work by Forbes (1965).

The identifier Quechan is derived from the name the Quechan apply to themselves. It translates as "those who descended" (Forde 1931; Kroeber 1943). This descriptor references the native oral tradition of the creation of the Quechan and their neighbors on the sacred prominence, a mountain known to them as Avikwame (also known as Spirit Mountain). Their name for themselves is variously expressed in other discussions in an abbreviated fashion as xam kwacan, meaning "those who descended in a different way." Alternatively, another translation is provided for these same words as "those who descended by way of the water." Formerly, anthropologists identified them as the Yuma.

The Quechan speak a language also known as Yuma and are members of the Yuman linguistic subfamily, a member of the broader Hokan linguistic stock. In 1980, it was estimated that there

were fewer than 700 speakers of the language. It is the most documented of Yuman languages, with several published grammatical sketches, ethnographic texts, and vocabularies (Golla 2011). Hinton's 1994 survey estimated the number of speakers between 150 and 500, while Golla's research in 2011 estimated that Quechan was spoken by 150 to 200 of the 3,000 members of the Quechan Indian Tribe. The majority of Quechan speakers are older, but some younger people are now learning the language and working to keep their ancestral tongue alive. Fluency in this language retains high social prestige for its speakers, especially in ceremonial context. Although no current systematic attempt is made to teach the language in schools, Quechan culture courses are taught at a local high school that incorporate the language (Golla 2011).

Quechan territory is now divided by the states of Arizona and California and is located near the confluence of the Gila and Colorado Rivers. Their traditional territory ranged from Blythe in the north to the United States/Mexico boundary in the south. Significantly, the Quechan reservation lies within their traditional homeland. Four to six locations were identified as ethnohistoric Native villages, all situated along the lower Colorado River. These included Avi Kwotapai between Palo Verde Valley and Blythe on the west side of the river. Also, Xenu mal vax was another Native American settlement that was near the contemporary town of Ehrenberg on the east side of the Colorado River.

The Quechan subsisted mainly on domesticated cultigens, wild plant foods, and fish (Bee 1983; Forde 1931). They planted seeds in the rich silt of the Colorado River floodplain after its waters had ebbed, and did so routinely and regularly with little risk and high returns. In some instances, seeds were planted several times during the year. Maize and melons were February plantings. Adding to the mix were teparies, corn, watermelon, black-eyed beans, pumpkins, and musk-melons. Winter wheat was a postcontact addition and would be gathered just before spring floods. Wild grasses were also seeded in the less fertile areas of ground. Up to 20 percent of the Native American diet consisted of fish from the lower Colorado River, including razorback, sucker, pike minnow, and bony tail. These were harvested through communal efforts with seine nets when the river was low.

The fields were cared for by the extended family, with men performing the heavier weeding chores and women sowing seed and storing the harvest. Wild native foods were also gathered; the principal targets for these efforts were the seed pods of mesquite and screw bean trees. The pods were crushed and the pulp eaten. This ground material served as a base for flour, was formed into cakes, or steeped in water to fashion a beverage.

Quechan religious beliefs traditionally involved the acquisition of spiritual power derived from special dreams and continuing interaction with the souls of the dead. This dream power is bestowed by the first people, created by Kukumat (their Creator), but imbued with spiritual power through Kukumat's son Kumastamxo. Dream power was critical to success as a leader, doctor, warrior, or religious specialist. Traditionally, the Quechan also had guardian spirits identified by the unique voices that spoke to them from time to time. Spirits and agents of the ancient ones, the first people, reside on the sacred mountain of Avikwame or other prominences in their territory. Only special speakers or singers had esoteric knowledge of religious matters. The singular collective Tribal ritual where these religious specialists held sway was the karuk. This Mourning Ceremony was fashioned to revere relatives who had passed away. The ritual was recognized as a reenactment of the original Mourning Ceremony following the Creator's death.

The learning of songs was—and continues to be—an important aspect of religious belief and practice. This included the learning of sacred songs, through dreaming, about the events that occurred at the time of the creation of the world. The singing of these songs by individuals was, and remains, a principal avenue of religious expression. The dreaming experience meant that sacred places could be visited, and the sacred landscape traversed, through dreaming rather than through conventional travel, although physical travel along trails to sacred places was also an important aspect of the religious experience. Travel on key Native American trails continues to be a cultural practice today to commemorate and experience traditional culture. The geography of sacred places related to the sacred song cycles of Yuman groups is a major cultural feature of the lower Colorado River region. Kroeber (1925:786) collected large quantities of information on places mentioned in Mojave song cycles, from as far afield as the Pacific Ocean and the Tehachapi Mountains, the Gulf of California, Tucson, and southern Nevada. Modern Quechan have stated that a similar geography of sacred places is important in their culture, but place names have not been compiled to the same extent.

The contemporary Quechan community is concentrated in the lands of the Fort Yuma-Quechan Reservation and has its main headquarters in Fort Yuma, Arizona. The reservation is approximately 45,000 acres and is located along the lower Colorado River in both Arizona and California just north of the United States/Mexico border. The U.S. Census tallied the number of residents on the Quechan reservation as 2,197 people in 2010. The economic basis for the Tribe consists of farming, a sand and gravel operation, recreational vehicle parks, a grocery store, a museum, a utility company, a fish and game department, and a resort/casino.

Chemehuevi

The name used by most anthropologists to identify this ethnolinguistic entity is Chemehuevi. However, this tag is of Yuman linguistic origin and was perhaps first applied by Father Garcés in 1776 (Coues 1900, 1:219, 224, 2:353, 444; Kroeber 1925:593). Such a moniker (Chemebet, Chemeguaba, Chemeguagua, and Chemegue) was most likely a term used by the padre's Mojave guides as a marker to describe a number of different Southern Paiute bands. Hodge (1907–1910, 1:243) identifies the term Tan'-ta' wats. Tan-ta-waits is also identified as an appellation by Fowler and Fowler (1971:156). Both terms mean "southern men" or "people who live in the south." The Serrano apparently identified the Chemehuevi as Yuakayam (Kroeber 1925:595), and the Quechan knew them as Mat-hate-vatch (Hodge 1907–1910, 1:243). The Pima recognized them by the name Ah'aalakat (Hodge 1907–1910, 1:242).

The Chemehuevi are the southernmost of 16 distinct groups of Southern Paiute speakers (Kelly and Fowler 1986). The latter groups all spoke a single language, with the various subgroups representing different dialectical divisions. These languages are members of the Southern Numic family of Uto-Aztecan linguistic stock. The Chemehuevi are distinct from their Southern Paiute linguistic kin in that they borrowed heavily from their neighbors, the Mojave, and, hence, have, in some instances, similar subsistence and religious cultural elements.

The traditional territory of the Chemehuevi included a large area southwest of what is now Las Vegas, Nevada, and an enormous expanse of land within the eastern Mojave Desert of California. Halmo (2001:45) described the range of the Chemehuevi as:

> …territory that extended in the north from roughly (east to west) Indian Springs through Ash Meadows in Nevada to the Funeral and Black Mountains immediately east of Death

> Valley; the western boundary encompassed the San Bernardino Mountains and Barstow, and extended from (north to south) Death Valley and the Panamint Range to the western flanks of the Avawatz Mountains, just east of Soda Lake south to the western flank of the Old Dad Mountains, near to or encompassing Cadiz Dry Lake, to the Big Maria and Little Maria Mountains, and to the area around Blythe, California. In the east, Chemehuevi territory included alluvial floodplain lands east of the Colorado River and up along the Bill Williams River and northward….

Kroeber (1925:595) noted that this was the largest piece of land held by any single ethnolinguistic group in California, and was one of the most thinly populated Native American territories anywhere in the state. He estimates that between 500 and 800 Chemehuevi were living within their territory during the precontact era (Kroeber 1925:595). Californian ethnographers Lowell Bean and Sylvia Brakke Vane disagree with Kroeber's population estimate and argue that a minimum of 13,000 Southern Paiutes inhabited a territory from what is now Las Vegas south to Palo Verde Valley and from the Colorado River into the Iron Mountains (Bean and Vane 1978:5–20).

It appears that, throughout much of prehistory, the Chemehuevi practiced a foraging subsistence strategy. They were hunter-gatherers who moved seasonally, taking advantage of the differential availability of key economic plant and animal resources. Their territory was a vast desert biome, and so they located their more permanent settlements near reliable sources of potable water.

Upland hunting parties traveled to more distant areas (away from villages) to acquire bigger game animals, principally bighorn sheep and deer. Antelope and jack rabbits were also hunted communally with drives using lengthy nets and constructed diversion fences. The Chemehuevi also collaborated with neighboring tribes in the pursuit of large game. Hunting parties traveled to the San Bernardino Mountains for cooperative efforts with their allies, the Serrano and Vanyume.

The Chemehuevi, who the earliest Euro-American explorers came to know, were living on irrigated horticultural lands along the Colorado River. In this part of their territory, their numbers were greater and permanent villages existed. It appears that the Chemehuevi adopted this pattern of floodplain agriculture from the Mojave. Plants that were amenable to this type of agricultural practice and were grown by the Chemehuevi included gourds, winter wheat, yellow maize, and certain semi-cultivated grasses (Kelly and Fowler 1986:371). The collection of wild plants supplemented the Chemehuevi diet, including the collection of blazing star, chia, rice grass, goosefoot, pinyon pine nuts, and acorns. Communal hunting parties generally hunted rabbits, antelope, and mountain sheep, with deer, bear, mountain lion, water fowl, small rodents, fish, lizards, and some insects rounding out the menu of Chemehuevi protein sources (Kelly and Fowler 1986:370).

Material culture for the Chemehuevi was similar to other Californian and Great Basin hunter-gatherers. Prior to their expansion into the lower Colorado River area, they did not have or use pottery. The Chemehuevi had a well-developed tradition in basketry and were also well known for their recurved, sinew-backed bows (Laird 1976:6). The latter were especially accurate and powerful and exceptionally well suited for hunting large game animals such as deer and bighorn sheep. Bands of Chemehuevi, who lived away from the river and without horticulture, typically fashioned conical brush structures or dome-shaped residences that were covered with grass or bark. Bands living closer to their cultivated fields adopted the use of pottery and, when living

nearer to the river, fashioned more substantial dwellings of wood and mud without a front wall (Kelly and Fowler 1986:371).

Historical accounts suggest that the Chemehuevi belief systems include a form of shamanism where power was bestowed upon a person through dreams. A prospective shaman would be visited in his dream by one or more guardians—usually in animal form—who would give him instructions, teach him songs, and bestow upon him shamanistic power (Kelly and Fowler 1986:383). The songs passed on through dreams were, and remain, of great importance culturally and include the Funeral, Deer and Mountain Sheep, Bird, Salt, Quail, and Coyote songs. These songs are generally descriptions of travels, complete with place names, important landmarks, natural phenomena, and environmental conditions (including the animals present). The recitation of important songs is common at Chemehuevi cultural events even today, again reflecting the importance of tribal history and tribal territory in modern Chemehuevi culture.

The Chemehuevi have a rich record of oral traditions, and their stories tell of the genesis of the world and emergence of their people from a place near Mount Charleston (*nuvant*)—the highest peak and a sacred place located near what is now Las Vegas, Nevada. As with much Great Basin and Mojave Desert mythology, Coyote is a principal figure in their stories and is a central divine being, an animal/human immortal responsible for providing the names of the animals, inventing agriculture, initiating various customs, teaching people about the bow and arrow, and training people on how to fashion pottery (Kelly and Fowler 1986:385). Coyote and his brother Wolf or Panther had their home at the beginning of the world on Charleston Peak (Kroeber 1908a; Laird 1984; Stoffle and Dobyns 1983; Stoffle et al. 2000; Sutton 1993).

The Chemehuevi borrowed and adopted certain cultural elements from their neighbors the Mojave, with whom they traditionally held rather amicable relations. Evidence of this is suggested by Chemehuevi language use. Chemehuevi speech has a number of Mojave loanwords and is often treated separately from the other varieties of Southern Paiute. All varieties spoken in the dialect chain from Chemehuevi to Northern Ute remain intelligible and constitute a single language, with the differences between these tribal groups considered social and cultural, not linguistic (Golla 2011). Nevertheless, there appears to have been a slight undercurrent of sometimes tense or adversarial interactions, and Kroeber notes that an armed conflict occurred between the Mojave and the Chemehuevi in 1867 (Kroeber 1925:594). It has generally been accepted by anthropologists that the Chemehuevi migrated into the Parker and Blythe area after the Halchidhoma left the area. However, other researchers (Roth 1976:81) believe that the Chemehuevi might have settled earlier in the Palo Verde Valley, before the out-migrations of the Halchidhoma.

Mojave tradition claims that the Chemehuevi were formally invited by the Mojave to come to the Colorado River after 1830. Other ethnographers claim that the Chemehuevi were residing at Cottonwood Island and in the Chemehuevi Valley prior to that date in the 18th century (Laird 1976:123). Kelly (1934:556) thought that the southern expansion of the Chemehuevi dated to the early 1800s. The recent historic and protohistoric population movements along the Colorado River are a subject of some continuing disagreement among anthropological scientists, historians, and the living descendants of the Chemehuevi and Mojave people.

The Chemehuevi lost their traditional lands to the U.S. government in 1853. A little more than a half-century later (in 1907), the Chemehuevi Valley reservation was established. The Tribe received formal Federal recognition and was reinstated in 1970. The Chemehuevi have a

contemporary land base of 32,000 acres of trust land that incorporates 30 miles of Colorado River frontage. The descendants of the Chemehuevi live on the Chemehuevi Indian Reservation (population of 308 in 2010) and Colorado River Indian Tribes (CRIT) Reservation, as well as on several other reservations, including the Twentynine Palms Indian Reservation (located in Coachella, California). The Chemehuevi dialect is currently spoken on the Colorado River Indian Tribes Reservation at Parker, Arizona, and on the neighboring Chemehuevi Indian Reservation. Although the Arizona Chemehuevis have started a language-revitalization program, there are few materials and no agreement on orthography. Currently, fewer than 20 first-language speakers are found on all reservations combined (Golla 2011). A Chemehuevi dictionary by June Leivas has been published as a part of the mitigation for the Genesis Solar Energy Project, and is available through the Chemihuevi Tribe.

Cahuilla

The Cahuilla call themselves Ivitem or Iviluwenetem. This means "people who speak iviat or iviluat." The name used by anthropologists, Cahuilla, is of uncertain origin but might be from their own word for boss or master, kawiya. Their neighbors, the Cupeño, call the Cahuilla the wolves in their language, which is one of their clans. The Cupeño also refer to the Cahuilla as the people of the east. The Luiseño identify them as "the easterners" in their language. Other names for the Cahuilla that have been applied are Cowela, Cowillas, Dancers, Danzarines, Gecuiches, Hakwiche, Jecuches, Jecueche, Jecuiches, Kahuilla, Kahweaks, Kah-we-as, Kahweyahs, Kauvuyas, Kau-yai-chits, Kavayos, Kavwaru-Maup, and Koahualla, as well as Tecuiche (Hodge 1907–1910, 1:669), Cahahaguillas (Bean and Mason 1962), and Coahuillas (Barrows 1900).

The Cahuilla language is a member of the Cupan subgroup of the Takic family of Uto-Aztecan stock. There are four members of the Cupan subgroup, and Cahuilla is more similar to Cupeño than to Luiseño. The territory of the Cahuilla covers much of central Southern California and includes the inland valleys of western Riverside County across the San Jacinto and Santa Rosa Mountains and into the Coachella Valley and the northern Colorado Desert. The Cahuilla landscape included the territory from the Orocopia Mountains in the east to San Gorgonio Pass and the area near the City of Riverside. Anthropologists have subdivided the Cahuilla into three geographical divisions: the Mountain, Pass, and Desert Cahuilla. The Desert Cahuilla lived closest to the study area. This subgroup focused their activities in the region of the Coachella Valley, Chuckwalla Valley, and areas west of the Colorado River.

Although dialectical differences existed between the three communities of Cahuilla, these differences did not prevent mutual understanding and intelligibility, and the communities maintained social and ceremonial ties with one another. The Cahuilla language is very well documented and grammars, dictionaries, and collections of narrative texts are available. Though there are no longer any speakers of Pass Cahuilla, there are five native speakers of Mountain Cahuilla as of 2004, and a dozen or so speakers of Desert Cahuilla. The Malki Museum at the Morongo Reservation in Banning has played an important role in language preservation and provides visitors with extensive information about the Cahuilla language (Golla 2011).

The Desert Cahuilla gathered wild plant foods from the lowland environments and emphasized mesquite, screwbean, cactus fruit, and hard seeds (Bean and Vane 1978:578). It has been suggested that the desert groups retained access rights to upland environments as well. Precontact Cahuilla subsistence/settlement patterns appear to have incorporated village sites

situated near a reliable source of water. These hamlets were occupied year-round by a single lineage group. Springs and resource patches might be owned by a specific lineage. Additionally, by 1824, the Desert Cahuilla were practicing irrigation agriculture and growing foods similar to the Colorado River Yuman groups. Those foodstuffs included maize, beans, squash, pumpkins, melons, and wheat.

Traditional subsistence patterns involved the movements of parts of the Cahuilla community to areas where they would collect and harvest plant resources as they became available. The agave, yucca, mesquite, cactus fruit, and certain grass seeds were targeted. As occasions allowed, the Cahuilla also hunted various game animals. Rabbits, deer, and bighorn sheep were favored quarry. Upland excursions were focused on harvesting key nut crops, including acorns and pinyon nuts. Both nut crops were storable and could last for many months.

Basketry arts were well developed and coiled wares of four types were fashioned: flat plates, food bowls, pack baskets, and storage containers. Stone mortars, pestles, and milling slabs; bowls of willow or mesquite, arrows; charmstones; bull-roarers; clappers; rattles; feathered headdresses and skirts; sandals; women's skirts; and rabbit skin blankets were included in their material technology.

The Cahuilla recognize the universe as an interacting system, and saw people as an important part of that world. However, they also respected the existence of powerful supernatural beings that were active in the affairs of the Tribe. Soul spirits inhabited the living and yet had another existence after a person's death. These spirits would travel to the land of the dead and this was the place where the first people lived. Messages from these spirits to the living aided those here on Earth.

Many rituals were prominent in Cahuilla life, and both Strong (1929) and Bean (1972) have identified at least 10 or more types of rituals. The most important of these ceremonies were the annual mourning ceremony, eagle ceremony, rites of passage (particularly birth, naming, adolescent initiation, and marriage), status changes of adults, and increase rites (inducing supernatural beings to provide increased number of animals or plants ensuring an adequate and abundant food supply). The emphasis in many of these rituals was the performance of song cycles, setting the place of the Cahuilla in the universe and affirming the relationship of the past to the present, one to another, and to all things.

Cahuilla leaders Juan Antonio and Cabeson, among others, acted as negotiators for the treaties between the Cahuilla and the U.S. Government in 1851. Reservations were established for the Cahuilla in 1875 and they were able to maintain their traditional patterns in combination with wage labor until about 1891, when Federal supervision of the 10 Cahuilla reservations increased. This supervision included enrollment in government schools and cultural suppression of traditional Cahuilla lifeways. Today, Cahuilla reside on eight different reservations in and around the San Jacinto Mountains and Coachella Valley.

Agua Caliente Band of Cahuilla Indians. The Federally recognized Agua Caliente Band of Cahuilla Indians was granted land at Tahquitz Canyon, Riverside County, in 1876. From 1891 until the 1930s, Indian Service (Bureau of Indian Affairs) personnel lived on-reservation and closely controlled tribal politics. The Indian Reorganization Act of 1934 gave more political autonomy to the Cahuilla, permitting, among other rights, the authority to reestablish tribal governments. Currently, the tribe is based out of Palm Springs, California, and its members constitute the largest single landowner in Palm Springs. The Agua Caliente Band is governed by

a tribal council consisting of a chairperson, vice-chairperson, secretary/treasurer, and two council members. The council members are elected by the tribe, and elected members appoint four proxy members. The tribe maintains a cultural resources department directed by a Tribal Historic Preservation Officer. The tribe has numerous business ventures including the Agua Caliente Casino, Resort and Spa in Rancho Mirage; the Spa Resort Casino in Palm Springs; a golf resort, and real estate.

Augustine Band of Cahuilla Indians. The Augustine Tribe and their Reservation are both named after Captain Vee-Vee Augustine, a Cahuilla leader born in 1820. There were at least 22 village sites noted by early explorers in the Coachella Valley, one of which ended up being the Augustine Reservation. The Reservation was established by Congress in 1891 at the Temal Wakhish village site near Thermal, California. In 1972 there was only one last surviving member of the tribe, Roberta Augustine the great-granddaughter of Captain Augustine. Roberta had three children who, along with their descendants, constitute the official tribal membership today. This Federally recognized tribe is based out of Coachella, California, and is governed by a tribally elected chairperson. Economic ventures for the tribe include the Augustine Casino, and the Augustine Solar Energy Park, a 1.1 MW solar photovoltaic (PV) plant at the Augustine Solar Energy Park built on reservation land.

Cabazon Band of Mission Indians. The Cabazon Reservation was established in 1876 and is a Federally recognized tribe based in Indio, California. The primary economic resource on the 1,153 acre reservation is agriculture. As Mission Indians, the Cabazon Reservation associates and interacts closely with the network of other reservations of Mission Indians in the region. The tribal government of the Cabazon Band of Mission Indians consists of five tribally elected officials; a chairperson, a vice chairperson, a secretary/treasurer, a liaison/general counsel, and a member at large. Elections are held every four years for these positions. The tribe employs a cultural resources director to handle cultural resource issues. The Fantasy Springs Casino and Resort in Palm Springs is operated by the tribe.

Cahuilla Band of Mission Indians. The Cahuilla Indian Reservation is located about 25 miles east of Temecula and 35 miles west of Coachella Valley, based out of Anza. The Federally recognized reservation was established in 1875 and today consists of about 60 homes on 18,884 acres of land. There are currently 325 enrolled Cahuilla members. The Cahuilla tribal government consists of a five-member tribal council elected by the general membership. The Council consists of a tribal chairperson, a vice chairperson, a secretary, and two council members. In addition, various tribal committees are appointed to address specific government functions within the tribe. Major sources of income for the tribe include the Cahuilla Casino, the Cahuilla Travel Website, and the Cahuilla Smoke Shop. In addition, the tribe has recently allocated 2,000 acres for future economic development, including renewable energy development, commercial warehousing, and a gas station/convenience store.

Morongo Band of Mission Indians. The Morongo Reservation was established in 1876, and is located in Banning, California. Members of the reservation are of the Serrano, Cupeño, and Cahuilla groups. In terms of area, at 35,000 acres, the Morongo Reservation is the largest of the Cahuilla reservations. The Morongo Band of Mission Indians is a Federally recognized group governed by a tribal council consisting of a chairperson and vice chairperson, as well as five council members. The tribe is the largest private-sector employer in the Banning region, and its economic resources include agriculture, cattle, recreation, the Four Diamonds Resort, the Morongo Casino Resort and Spa, restaurants, and a golf course, among other businesses. The

tribe maintains a cultural heritage program to promote the tribe's history, language, and connection to the land.

Ramona Band of Cahuilla Indians. The Ramona Indian Reservation was established in 1893 at the base of Thomas Mountain, in Anza, California. In 1970, there were only two members of the tribe, neither of whom lived on the 560-acre reservation. The members of the Ramona Tribe are direct descendants of the Apapatchem clan, known as the "Medicine People." The reservation is located in the area where historically this clan gathered food, water, and medicine, and held spiritual ceremonies and celebrations. The tribal government of the Federally recognized Ramona Band of Cahuilla Indians consists of a tribally elected tribal chairperson and vice chairperson. One of the major economic vehicles for the tribe is the Ramona ecotourism project. This is a Department of Energy funded project to develop renewable energy projects in remote locations. The tribe will be one of the first "off-grid" reservations, using wind, solar photovoltaic/propane generator hybrid systems to generate between 65-80 kWh/day to power the reservation's housing, offices, and business ventures.

Soboba Band of Luiseño Indians. The Federally recognized Soboba Indian Reservation was established in 1883 on a 3,172-acre parcel that included the village of Soboba. A non-Indian individual also claimed ownership of some of this land. After several legal battles, the private land was purchased by the Federal government and was then held in trust for the people of the Soboba band by the Department of the Interior. Today the Reservation encompasses almost 7,000 acres and there are about 1,200 enrolled tribal members. The Soboba Indian Reservation is located in San Jacinto, California. The Tribal Council consists of a tribally elected chairperson, and a vice chairperson, a secretary, a treasurer, and a sergeant-at-arms who are elected by the Tribal Council.

Torres-Martinez Desert Cahuilla Indians. The Torres and Martinez Reservations were established independently in 1876. Later, under the Relief of Mission Indians Act of 1891, these two reservations were combined. The Federally recognized Reservation encompasses about 18,223 acres near Thermal, California. The tribal government of the Torres Martinez Tribe consists of eight tribal council members who are elected by the general membership. The Council members consist of a chairperson, a vice chairperson, a secretary, a treasurer, and four non-office holding members. The tribe employs over 150 people in positions within various tribal departments (e.g., accounting and finance, environmental protection, planning, security), and owns and operates the Red Earth Casino.

3.5.1.5 Historical Background

European exploration of the Colorado Desert began in 16th century, but sustained Euro-American settlement of the region did not occur until the mid-19th century. This extended period of exploration without expansion creates a long Proto-historic period in the region, during which Europeans and local Native American groups knew of one another but interacted very little. This time period is discussed above from the point of view of Native American history. Below, the Euro-American expansion into the region and subsequent historical developments are described.

European Exploration

By 1539, the Spanish had begun to explore parts of what they named Alta California. Early explorers such as Francisco de Ulloa (1539), Hernando de Alarcon (1540), and Francisco de

Coronado (1540) led expeditions into the Gulf of California, reaching the mouth of the Colorado River and continuing up the river past the Gila confluence. However, little exploration of the interior deserts was undertaken until much later. Spanish exploration of the interior deserts for the next 200 years was intermittent, as the region was considered desolate, remote, and filled with staunch indigenous adversaries such as the Mojave and Quechan.

The first recorded explorer of the interior Colorado Desert region was Father Eusebio Francisco Kino, a Jesuit missionary, cartographer, and explorer. Starting in 1691, Kino established a string of missions in northern Mexico and southern Arizona, finally reaching the Colorado River in 1702. Almost 70 years later, Father Francisco Garcés followed Kino's route, reaching the villages of the Quechan at the junction of the Gila and Colorado Rivers in 1771. Garcés's party crossed the Colorado River and traveled west through the desert until they could see the San Jacinto Mountains in the distance, before returning to Sonora. Three years later, Father Garcés and a Spanish border captain named Juan Bautista de Anza attempted an overland route to Monterey. When they reached the Colorado River, Anza found the local Quechan to be surprisingly friendly. The Quechan assisted the Spanish in fording the river, locating wells and trails, and ultimately rescuing an exploring party lost in the desert. In the 1800s, most of the travel from Arizona to central California followed Anza's route.

Transportation

Sustained economic development in the Colorado Desert region only began in the 1870s, and came to fruition in the early part of the 20th century. Development was dependent largely on two things: transportation and water. The first of these came in the form of a series of overland trails and stagecoach lines created to service the emerging mining towns. Early in the 1860s, Hank Brown and John Frink independently developed routes to access the gold mines in the vicinity of La Paz, Arizona (von Till Warren et al. 1980). Frink's route was an east/west road established as an alternative to the more southern Butterfield Stage. This was apparently the first development across the Palo Verde Mesa, although it has since all but disappeared (von Till Warren and Roske 1981:17–18). In 1862, William D. Bradshaw opened a route, later known eponymously as the Bradshaw Trail. This route crossed the desert to the La Paz mining district. Bradshaw also operated a ferry across the Colorado River near Providence Point, opposite a small community that would become Ehrenberg, Arizona.

Bradshaw developed his road partly along Brown's and Frink's previous routes, although Bradshaw's trail headed more directly east from the Salt Creek Pass to the southern slopes of the Orocopia and Chuckwalla Mountains. Bradshaw, like the majority of early trailblazers, used Native American routes that predated Spanish exploration. Part of Bradshaw's Trail may have been the Coco–Maricopa Trail, which intersected the Colorado River near Blythe. The Bradshaw Trail, like many other cross-country routes, became largely obsolete with the arrival of rail service in the desert and the depletion of the La Paz gold fields in the late 1870s. The railroads reoriented the development of trails and wagon roads that connected new mining communities to major routes of transportation. Railroad stops became destinations for wagon roads, allowing points of access to develop the remote desert interior (von Till Warren et al. 1981).

The first railroad came to the Colorado Desert in 1877, with the construction of the Southern Pacific Railroad. The Southern Pacific line began on the west coast and reached Yuma on September 30, 1877. The railroad was the single most important boost to mining in the

southeastern Colorado Desert, offering convenient transportation of heavy mining equipment, supplies, personnel, and, when the miners were lucky, bullion. By 1880, the Southern Pacific Railroad was providing access to new gold and silver ore deposits in the Chocolate Mountains, Cargo Muchacho, and Palo Verde Mountains. Water remained a scarce resource in the desert, with most water for mining enterprises coming from highly localized sources such as springs, wells, and streams.

Mining

After the Treaty of Guadalupe-Hidalgo in 1848, the United States took control of the U.S. Southwest in the same year that gold was discovered in California. Mining camps were established in the desert as early as 1850, with the beginning of gold mining at Salt Creek in the Amargosa Desert. Along the eastern bank of the Colorado River, the town of La Paz, once known as Pot Holes, developed when gold was discovered nearby. The subsequent mini-gold rush in the area made La Paz an instant boomtown whose population peaked at 1,500 in the 1860s (Wilson 1961:25). Along the stage line between San Bernardino and the Colorado River, La Paz was an important stop, serving as the county seat for Yuma County until 1870 (Thompson 1985). The La Paz mining district yielded placer gold for only a short period, though, and by the end of the 19th century, La Paz passed from boomtown to ghost town.

The first Euro-Americans to arrive in the Colorado Desert in any numbers were prospectors hunting for the next big gold strike. Regionally, mining and prospecting activity was most intense in the mountains and high deserts of the Mojave, but small-scale mining has been a consistent feature of the Colorado Desert from the 1800s to the present day. By 1863, between "2,500 and 3,000 [Euro-]Americans and Mexicans were on the river between Palo Verde Valley and El Dorado Canyon," most of them engaged in mining (Poston 1863:387, cited in Bean and Vane 1978:5–21). Generally speaking, mining productivity in the Colorado Desert was greatest between 1890 and 1910, with a brief resurgence during the Great Depression in the 1930s, when a hard-scrabble existence in the desert seemed preferable to unemployment in the cities (Morton 1977; Rice et al. 1996). In the vicinity of the Project area, manganese and gypsum mining were particularly intense during the initial years of World War I (WWI) and World War II (WWII), when other mining activities were reduced or curtailed entirely.

In the 1820s, limited placer mining began in the eastern Colorado Desert. In the early 1800s, prospectors were some of the only Euro-Americans traveling in the California deserts, and they frequently came into conflict with Native American groups. From the 1840s through the 1880s, the U.S. Cavalry established a series of camps and forts throughout the Arizona, Nevada, and California deserts to protect settlers and immigrants from the often hostile tribes whose territories they were invading. In 1848, the discovery of gold at Sutter's Mill brought a tremendous influx of Euro-American and European settlers to California. Between 1849 and 1860, an estimated 8,000 emigrants crossed the Colorado Desert on their way to California (Laflin 1998:10). In the 1850s, some would-be miners tried their luck in the eastern Colorado Desert, but found very little gold. Most miners simply passed through the desert on their way to the larger strikes to the west and north.

By the early 1900s, the glory days of mining were over. In the Palo Verde Valley area, mining remained a relatively small part of the economy, never becoming the economic boon that early town planners might have hoped. Several modestly successful copper mines such as the Crescent

Mine and Smith-Hopkins Mine were located in the northern McCoy Mountains, but the less-glamorous gypsum and manganese deposits became more important in the region. In the northern extent of the McCoy Mountains, several mines produced significant quantities of manganese, the ore being used to harden steel for armaments (Butler 1998:44; Shumway et al. 1980:44). During WWI, the Blackjack Mine employed one to two dozen men at a time to extract 45% pure manganese ore, which was shipped east for use in armament factories. A brief mention of the mine in the Blythe Herald optimistically proclaimed the "outlook" at the Blackjack Mine "unusually good" due to the inflated war-time price of manganese ore (Blythe Herald, October 11, 1917). With the end of the war in 1918, though, the price of manganese fell to pre-war levels, and manganese mines lay largely dormant until the onset of WWII in the 1940s.

When the United States formally entered WWII, manganese mines in the McCoy Mountains became active once again. Of the dozen or so manganese mines active in the vicinity of the McCoy Mountains north of Blythe during WWII, the largest was the Arlington Mine along the northeastern flank of the McCoy range (Shumway et al. 1980:44). From 1942 to 1945, the Arlington Mine shipped roughly 8,500 tons of ore via the Santa Fe Railroad at the Inca (Cox) siding (Shumway et al. 1980:44; see also Palo Verde Valley Times, November 19, 1942, and June 24, 1943). In 1945, the government created new, more-stringent specifications for manganese ore that none of the McCoy deposits could meet, leading to a near total shutdown of the mines in a matter of months.

Homesteading and Agriculture

The passage of the Homestead Act in 1862 and the Desert Land Act in 1877 were instrumental in the settlement of the Lower Colorado River area. The Homestead Act offered the opportunity for United States citizens to file a claim on 160 acres or less of land for $1.25 per acre. The Act stipulated that the claim be for purposes of actual settlement and cultivation, and the claimant was required to "improve" the plot by building a dwelling and cultivating the land. After five years on the land, the original filer was entitled to the property (National History Day n.d.).

On the Palo Verde Mesa, agriculture remained a challenging pursuit due to poor soils and lack of water. These impediments, though, did not stop a few enterprising souls from attempting to raise plants and livestock on the land. The incredible success of the irrigated fields in the Palo Verde Valley surely encouraged expansion onto the inhospitable mesa. In 1929, the Palo Verde Mesa and Chuckwalla Valley Development Association proposed a large-scale irrigation project for the Palo Verde Mesa. The irrigation project was further explored in 1931, and the main project canal was proposed to follow a contour line around the mesa. Ultimately, the project did not come to fruition. In 1936, the Palo Verde Irrigation District proposed another irrigation project following the mesa contour lines and centered on the McCoy Wash within the Project. Several tracts of land were claimed as Homestead Entries and Desert Land Entries in the area. These were developed as part of the new Palo Verde Irrigation District. Despite high hopes and good intentions, most of the originally developed fields lay fallow now.

World War II Desert Training Center/California-Arizona Maneuver Area

Early in 1942, shortly after the bombing of Pearl Harbor and the U.S. entry into WWII, the Director of Army Ground Forces and Combat Training for the War Department, Lt. General Lesley J. McNair, ordered the creation of the Desert Training Center (DTC) in California,

Arizona, and Nevada. The DTC was to be a training facility where U.S. troops could become acclimated to the rigors of desert fighting, and desert tactics and military equipment could be tested before the inevitable confrontation with the Germans in North Africa. General McNair believed in greater "realism in training," which he equated with "large maneuvers and live-fire exercises" of a kind rarely seen in U.S. military training up to that point (Gorman 1992:1). The DTC was, thus, also intended to function as an enormous mock theater of war in which McNair's ideas about "realism in training" could be put into action.

One man who shared McNair's abiding belief in training realism was General George S. Patton, Jr., who had only recently been placed in command of the first tank unit in U.S. military history, the 1st Armored Corps. Early in his military career as a cavalry man, Patton had observed first-hand the importance of large, realistic training maneuvers. In 1916, as part of the punitive expedition against Pancho Villa, the cavalry amassed in the western deserts a "war strength regiment of infantry and some artillery … in the midst of an unrestricted maneuver and hundreds of square miles of varied terrain," and the training benefits were, in Patton's words, "almost UNIMAGINED" (Patton 1917, in Province 2002:19; capitals in original). Therefore, when General Patton was tasked with overseeing the creation of the DTC in the western deserts of California, Arizona, and Nevada, he was fully aware of the hardships and "unimagined" benefits of the deserts. Patton scouted the region by plane, jeep, and horseback beginning in March 1942. The area he eventually chose was well suited to military training because of several features, such as the general lack of human habitation, the difficult and varied terrain, the established railroads and highways, the presence of several military installations throughout the region, and the fact that much of the land was owned by the U.S. government (Henley 1989:5–7).

Desert Training Center

Patton established his base of operations near Shaver's Summit (now Chiriaco Summit) at Camp Young. Troops began arriving at the DTC in April 1942 and endured harsh physical training that included limited water, physical endurance training, and lack of sleep. Life at the DTC was so difficult that the officers and enlisted men came to refer to the facility as "the place that God forgot" (Henley 1989:22–24). Patton commanded the DTC for only 3 months, and in July 1942, he was placed in charge of the Allied invasion of North Africa, code named Operation Torch. When General Patton left the DTC, his units were replaced by 12,000 new troops, and he was replaced by Major General Alvan Gillem, Jr. All of the maneuvers that took place in the Project vicinity were likely under the direction of Major General Gillem and his successors. Patton's exercises were largely confined to the desert reaches around Camp Young, many miles to the west. The first large-scale maneuvers reported in the local Palo Verde Valley Times newspaper began in August 1942, and were under the direction of Major General Gillem; maneuvers eventually spilled onto the Palo Verde Mesa.

California-Arizona Maneuver Area

After the resounding success of the Allied troops in North Africa, the need for desert training evaporated, but the perceived benefits of the DTC as a vast theater of war ensured the center's survival. In 1943, after 19 months of operations and expansion, the DTC was home to almost 200,000 troops and had grown in size to an area larger than the whole of England. At its largest, the DTC/California-Arizona Maneuver Area encompassed some 18,000 square miles in California, Arizona, and Nevada. On October 20, 1943, the DTC was officially renamed the

California-Arizona Maneuver Area (C-AMA), in recognition of the evolving purpose and scope of the facility (Meller 1946). The facility, though, continues to be better known as the Desert Training Center, and most researchers today refer to the facility by the somewhat cumbersome name, Desert Training Center/California-Arizona Maneuver Area, or DTC/C-AMA (Bischoff 2000). A contemporary account of the DTC/C-AMA, dated November 19, 1943, by Captain Herbert Chase, Public Relations Officer, describes the mission of the facility:

> The mission of the California-Arizona Maneuver Area is to train, maintain, and supply troops realistically as in a Theatre of Operations. The training is designed to harden troops physically and to train soldiers mentally for the shock of battle. Much of the firing is conducted under realistic battle conditions. Other objectives are the development of tactics, techniques, and training methods suitable for desert warfare, and to test and develop equipment and supplies [as quoted in Baty and Maddox 2004:88].

In addition to the command center at Camp Young, the DTC/C-AMA eventually contained 12 divisional camps in California and Arizona, including the top-secret Camp Bouse where specially equipped tanks and their crew were readied for action against the Germans (Baty and Maddox 2004; see also Henley 1989:9). Of the California camps, Camps Iron Mountain, Essex/Clipper, and the short-lived Camp Rice (40 miles north of the Project) were constructed in the spring of 1942. Shortly thereafter, Camps Coxcomb and Ibis were constructed in the summer of 1942 and the winter of 1942/1943, respectively (Bischoff 2000). Camp Pilot Knob, the farthest south camp located roughly 60 miles due south of the Project, was constructed in the spring of 1943. Camps Laguna, Horn, Hyder, and Bouse, in Arizona, were constructed after the Arizona land known as "Area B" was added to the DTC/C-AMA in the summer of 1943 (Bischoff 2000:23). These camps are the most visible remains of the enormous flurry of military activity in the DTC/C-AMA between 1942 and 1944, but they were not the true focus of that activity. None of the DTC/C-AMA camps were located in or near the DQSP, although there is evidence that the Project area was used for training.

Blythe Army Air Base

To support the mission of the DTC/C-AMA, several desert airfields were commandeered and significantly improved by the Army from 1942 through 1944. One of these wartime training bases was the Blythe Army Air Base, which was originally constructed by the Civil Aeronautics Administration (CAA) in 1940 as the Intermediate Flying Field Site 21 (Wilson 2008:4). With the development of the DTC/C-AMA, the little airfield west of Blythe was identified as an excellent candidate for Army use, and it was officially taken over by the Army in April 1942, under the direction of General Henry H. Arnold, Commanding General of the Army Air Forces (Wilson 2008:12). One month later, the 46th Bombardment Group was deployed to the Blythe Army Air Base, and the men immediately went to work building base housing, bringing in utilities, and improving the airfield facilities.

By September 1942, the airfield was formally designated the Blythe Army Air Base, with paved runways suitable for military aircraft. In the spring of 1943, the airfield was further improved, and an "unusually large taxi strip, of a type heavy enough to accommodate the largest four-motored bombers," was constructed (Palo Verde Valley Times, June 4, 1943; see also May 13, 1943). From the fall of 1942 to 1945, the Blythe Army Air Base supported numerous training exercises in the DTC/C-AMA, and became known for its excellent training of heavy bomber

crews who went on to complete hundreds of successful bombing missions in Europe and the Pacific (Wilson 2008).

Ultimately, the size of the DTC/C-AMA training exercises became too large to manage, as all available fighting troops were needed on the fronts in Europe and the Pacific. After training hundreds of thousands of enlisted men and officers, and aiding in the formulation of numerous tactical advances, the DTC/C-AMA was closed in April 1944. As a heavy-bombing training facility, the Blythe Army Air Base remained in operation for another year. At the end of 1945, though, after months of slow down-staffing and dismantling, the Blythe Army Air Base was decommissioned and returned to the people of Blythe as a community airport (Palo Verde Valley Times, October 11, 1945, December 20, 1945).

City of Blythe

From 1855 to 1884, the U.S. General Land Office registered many new settlers in the Palo Verde Valley (Setzler 1998:iv). The first large-scale venture to develop land in the valley began in the 1870s with the arrival of Thomas H. Blythe, "the father of the Palo Verde Valley." Blythe was the visionary developer of the seasonally inundated lands on the west bank of the Colorado River, directly across from the established portage point at Ehrenberg, Arizona. Born Thomas Williams in England in 1822, Thomas changed his name after a series of business failures, and came to the U.S. for a new start in 1849. He eventually moved to San Francisco in 1855, and gained some success in a wide range of ventures, including mining, promotion, and general investment. Although he never married, Blythe had one daughter named Florentine Blythe, also known as Flora and Florence, who was born in 1873 and raised without him in England.

In 1875, Blythe traveled with an engineer named William Calloway to Ehrenberg, Arizona, along the Colorado River. Calloway had previously been engaged in building many of the desert roads of San Diego County, which at that time included most of current Riverside County. Calloway's knowledge of the land and engineering acumen impressed Blythe and encouraged him to consider investing in development along the Colorado River. Blythe and Calloway envisioned the development of the river-fed lands, and Blythe had a particular dream of constructing an elaborate hacienda in his newly developed riverside retreat (Setzler 1998:10). To realize his dream, Blythe hired Calloway as a project engineer and George S. Irish as project manager. In 1876, Blythe was introduced to Mexican General Guillermo Andrade, a promoter of colonization of the Colorado River on behalf of the Mexican government. Andrade became a silent partner in Blythe's scheme for development. In the coming years, Blythe's venture to clear and develop 40,000 acres of land west of the Colorado River became an obsession for him, although he spent very little time there (Setzler 1998:10).

In 1875, the venture filed for 400,000 acres of Swamp Land District No. 310, as designated by the California Swamp and Overflow Act (Palo Verde 2005:7). By late 1875, Blythe named his fledgling town, "Blythe City, in compliment to myself" (Setzler 1998:10). Initially the town consisted of tent houses, a corral, and a general store. Thomas Blythe made the first filing in California for water rights in 1877 when he requested rights to Colorado River water for his venture (Setzler 1998:v). He was granted 190,000 miner's inches. Together, Calloway and Irish developed experimental ditch and canal irrigation systems, hiring local Native American laborers who had been farming the floodplains successfully for centuries. The major project of their irrigation system was the construction of a masonry head gate in the riverbank to control flow to

the system (Palo Verde 2005:7). By 1878, a 40-acre experimental farm, known as the Colorado Company, was planted. In 1880, Calloway was killed in an altercation with two of the Native American workers, resulting in a delay in the completion of the main canal intake until he was replaced by C. C. Miller (Setzler 1998:11). Two years later, the canal was almost complete, and Blythe made his second and last visit to the site. Blythe was enthusiastic about the progress, but fatefully, he would never see the fruition of his $82,000 investment. Just 1 year later, on April 4, 1883, Thomas Blythe died of a heart attack in San Francisco (Setzler 1998:11). After years of convoluted legal battles, Blythe's daughter Florence inherited the property in 1904.

Almost immediately, the Mutual Water Company, the precursor to the Palo Verde Irrigation District, was formed to purchase the land from Florence Blythe. Later in 1904, the land was transferred to the Mutual Water Company. During this time, pioneering settlers continued to pour into the valley, and the town of Blythe grew from a tent city into a proper town, finally incorporating in 1916 with 600 residents on 832 acres of land (Palo Verde 2005:7). The first residents were "desert characters, homesteaders, pioneer settlers who wanted land of their own, fugitives from the law, and adventurers who met the accepted challenge to help tame the area and make it civilized" (Setzler 1998:ii). Mining activities and then homesteading and experimental farming continued to attract new residents and commerce via steamboat and railroad. Most of the early homes throughout the Palo Verde Valley were tent houses, although there were also a few adobe buildings in the region (Setzler 1998:1). Blythe and the Palo Verde Valley prospered in the 1910s, with high demands for crops related to wartime activities, most of all cotton. With a new cotton gin in 1911, and settlers clamoring for homestead lots, the town of Blythe experienced a small boom, peaking with high cotton production in 1919 and the end of WWI. Several civil projects were constructed during this period of prosperity, which set the foundation for the continuing growth of the city.

In transforming arid land into productive farming and grazing lands, water was the key. Long after Blythe had incorporated and residents began to farm the productive Palo Verde Valley with Colorado River water, the Metropolitan Water District was created in the 1930s to transport water from the Colorado River to the Los Angeles basin. The Metropolitan Aqueduct was constructed from Parker Dam, north of the Project, through the mountains east of Indio to Riverside and then to Los Angeles. It was the largest construction project in the world at the time, and as it developed, the Metropolitan Aqueduct provided much-needed jobs during the Depression (Pittman 1995). The diversion of water to the Los Angeles basin, though, was of little import to the farming communities of Blythe and the greater Palo Verde Valley, as they retained their water rights originally granted to the quixotic town founder, Thomas Blythe.

3.5.1.6 Identified Cultural Resources

This subsection provides the results of cultural resource inventories conducted by SRI and described in Lerch et al. 2016 to identify cultural resources within the Project area, including literature and records searches (California Historical Resources Information System [CHRIS] and local records), archival research, Native American consultation, and field investigations. The BLM found no additional resources within the Direct APE during the May 2, 2018 Class III survey.

For purposes of this discussion, the Project area for NEPA is equivalent to the Area of Potential Effects (APE) under the NHPA and CEQA. The regulations implementing NHPA §106 define

the APE as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR §800.16(d)). In addition, the APE may be buffered for purposes of cultural resources inventory to facilitate the identification of resources that may be located in proximity to the APE and indirectly affected by a proposed project or to allow for redesign of project components to avoid direct effects to cultural resources. The direct APE for this analysis is defined by the boundaries of the Proposed Action. Within the direct APE, ground-disturbing activities would range in depths from 12–18 cm (5–7 inches) for the site surface preparation to 3.7 m (12 feet) for the solar-panel-support posts to 1.2 m (4 feet) for electrical-conduit trenches and to approximately 3 m (10 feet) for electrical vaults (First Solar Development, LLC 2014:35–38). These depths of disturbance, or the vertical APE, will be distributed across the project site at various locations within the direct APE. The indirect APE includes a one-mile buffer surrounding the direct APE, as well as expanded area to incorporate the Mule Tanks Discontiguous Rock Art District. The APE is illustrated on Figure 3.5-1. SHPO agreed with the APE in 2014.

3.5.1.6.1 Previous Research

Numerous studies have been completed in the vicinity of the Project area. Recent projects with archaeological studies include Southern California Edison's Devers to Palo Verde II Transmission Line, Genesis Solar Energy Project, Blythe Solar Energy Project, McCoy Solar Energy Project, and the Blythe Mesa Solar Energy.

A Class III survey report for the current Project was conducted by SRI in 2016. SRI completed the records search at the at the CHRIS Eastern Information Center (EIC) in 2014 of the entire Project area as well as an approximate one-mile buffer around the Project area that may be subject to indirect impacts (Lerch et al. 2016). The following information is taken from the Class III report generated by SRI for DQSP. The records search identified 20 previous cultural resource studies that have been conducted in the Project area and 20 that had been conducted within the vicinity of the Project. The studies conducted included 35 archaeological surveys, three site evaluations, one records search, and one special study. Twenty-two percent of the Project area had been previously examined for cultural resources. SRI also consulted a regional ethnographic overview of the Colorado Desert written by Bean and Vane (1978), unpublished field notes taken by Rogers (1953), and a sample inventory for the Riverside East SEZ by Millington et al. (2013). This last study resulted in ten additional sites being identified within the vicinity of the Project. SRI also utilized ASM Affiliates' site sensitivity model developed in 1998 (McDonald and Schaefer 1998), to hypothesize the expected likelihood of buried cultural resources within the Project area. The ASM report previously reviewed a large portion of the Project area and ascribed a mostly low sensitivity for buried resources to the Project area.

The records search identified 33 previously identified archaeological sites and 12 isolates within the Project area, and an additional 220 archaeological sites and 84 isolates in the vicinity of the Project for a total of 253 archaeological sites and 96 isolates within the one mile search radius of the Project area. The site types present within the Project area and vicinity include 112 prehistoric sites, 104 historic sites, 37 multicomponent sites, 64 prehistoric isolates, 29 historic isolates, and three multicomponent isolates. Prehistoric sites consisted of artifact concentrations, habitation sites, geoglyphs, rock art sites, quarries, thermal features, and trail segments. Historic

sites types previously recorded were artifact concentrations, military activity sites, roads, survey markers, and transmission lines. Multicomponent site types documented were artifact concentrations, one structure, one habitation site, one quarry with military activity present, and trail segments.

Only three sites were previously determined eligible for listing on the NRHP. These include P-33-000773, the Mule Canyon site, and P-33-000504, the Mule Tank site, which together are listed in the NRHP as the Mule Tank Discontiguous Rock Art District. Both these sites are located outside the Project area in the nearby vicinity. Site P-33-000504 is a rock art site located west of the Project, while P-33-000773 is a geoglyph and associated features present within the Mule Tank NRHP District. The third eligible site is P-33-000053, the Coco-Maricopa Trail, which passes near the north side of the Project (Lerch et al. 2016).

3.5.1.6.2 Prehistoric Site Types

Habitation Sites

Habitation sites are characterized by a wide variety of occupation debris and, occasionally, the remains of domestic architecture. These sites can contain living areas (see also rock rings and cleared circles, below), cooking hearths, subsistence remains (faunal bone and plant remains), midden deposits, and artifact scatters. Within the habitation site type, a range of subtypes exist, distinguished primarily by the intensity and longevity of the use of the site as a living space.

Habitation sites can range from very large, permanent villages occupied year round by several families, to small, temporary camp sites occupied once for a matter of days or weeks. Even temporary habitation sites can contain discrete activity areas devoted to a variety of activities such as lithic reduction, milling, butchery, cooking, and other subsistence-related activities.

Prehistoric habitation sites are mainly found within the Colorado River floodplain outside of the Project area. However, four habitation sites were located within the vicinity of the current Project (Lerch et al. 2016). Many of the prehistoric sites include small to large artifact scatters associated with a thermal rock feature.

Thermal Rock Features

The Project area contains numerous thermal rock features consisting of a concentration of fire-affected rocks that may be partially buried. Most of the thermal rock feature sites also contain an artifact scatter. Only one of the sites contained a rock feature that was not fire affected. It consisted of a collection of manuports. Thermal rock features are often interpreted as the remains of roasting pits are occasionally found away from domestic debris as isolates or in groups. Roasting pits sometimes occur in association with natural stands of specific food resources, such as agave, pinyon nuts, and saltbush seeds. These plant foods were often harvested, processed, and roasted before consumption or transport to established habitation sites (Lightfoot and Parrish 2009:347, 354). A roasting pit is a type of earth oven constructed by digging an oval to circular hole and lining it with vegetation or cobbles and small boulders. A fire may be built over the rocks to heat them before placing the plant food materials in the earth oven, or the foodstuffs may be placed directly on the cobbles and then covered with other materials (e.g., green plants, rocks, soil) before a fire is built over the entire feature.

Historic Camps

Temporary historical camps are found throughout the Colorado Desert. These camps often include features such as campfire/hearths and debris scatters, as well as rectangular cleared areas, often called "tent pads," that may have been cleared to create a more comfortable sleeping area for sleeping bags and tents. Specific types of temporary historical camps in the Project may include construction camps for linear facilities (railroads, transmission lines, water conveyance, etc.), mining camps, and military camps and bivouacs, and early land and resource surveys.

Water Wells

Formal structures built of wood, stone, concrete, metal, and other materials are not common in the Palo Verde Valley pass owing to the harsh environment, which inhibited homesteading. In the Project vicinity, three sites contain historic water well sites; no other structures have been recorded within the Project area.

Survey Markers

Survey makers were found throughout the Project area and are associated with the 1917 GLO survey. Some of these markers included associated linear disturbances that consist of two feet wide clearings around the survey markers; they were most likely made by the surveyors. A few campsites possibly identified by the GLO surveyors were also identified within the Project vicinity. Only one USGS survey marker was observed (Lerch et al. 2016). The survey markers were recorded as archaeological sites and they represent a single use event of the area.

Emplacements

The Project vicinity also contains remnants of various landscape modifications likely associated with active battles during the training maneuvers of WWII. Most appear to be fortified positions consisting of shallow dug-out depressions surrounded by low earthen berms and, occasionally, low walls of dry-stacked stones, and usually including only a few emplacements in a small area. One site within the Project area contains circular pits dug in a straight line that may have been used as tank emplacements during training activities (Lerch et al. 2016).

Multicomponent Sites

Several multicomponent sites were identified within the Project area. These sites were ones that no definitive temporal association could be assigned due to the presence of both historic and prehistoric period artifacts. Archival research was used to attempt to designate a period assignment to, but in some cases it was not possible. There are numerous sites within the DQSP Project area that contain both prehistoric and historical-period resources; however, if the majority of one resource type was present, SRI typically attempted to assign the site a prehistoric or historic designation. In these cases, the site description includes a mention of the other resources present.

Isolated Finds

Isolated finds consist of single, occasionally multiple, prehistoric or historical artifacts. Isolates have been found on a variety of surfaces, including desert pavement, gravel beds, and washes. For this Project, isolated finds were defined as two or fewer artifacts separated from other sites or artifacts by at least 30 m, or any group of artifacts more than three, if these artifacts could refit (e.g., a ceramic "pot drop" or a broken glass bottle). Isolated artifacts are typically determined not eligible for listing on the NRHP or CRHR, as they often lack integrity of location, setting, feeling, and association. However, some isolates may exhibit such integrity, and thus could be determined NRHP- or CRHR-eligible.

3.5.1.6.4 Archival and Library Research

Prior to conducting the field investigation, SRI completed archival research to fully investigate the background of the Project area. They consulted historical documents, historical maps, General Land Office (GLO) plat maps, aerial photographs, land patents, and land-entry files. Repositories and agencies visited included BLM, the County of Riverside, Transportation Survey Division, the Los Angeles Public Library, Nationwide Environmental Title Research, Palo Verde Irrigation District, U.S. Geological Survey, U.S. National Archives and Records Administration, National Archives at Riverside California, and Ancestry.com. Using the information gathered from archival resources, SRI was able to establish a historical context for the Project area that was useful for evaluating the historical resources present in DQSP.

3.5.1.6.5 Native American Coordination

SRI contacted the Native American Heritage Commission (NAHC) for a search of their Sacred Land Files during the 2016 Phase I study (Lerch et al. 2016). The search indicated that no known Native American Traditional Cultural Places (TCPs) were recorded within the Project area. The NAHC requested that SRI contact 36 tribal representatives to inquire about TCPs that might be known to the representatives and to solicit comments on the Project. An additional 15 contacts with traditional-use areas within the Project area were given to SRI by the BLM. SRI contacted all 51 individuals by sending them a letter with Project information. Responses from four tribes were received and three wished to engage in consultation. The contact program did not result in the identification of any previously known TCPs within the Project area. All contact with tribes was summarized in a separate ethnographic literature review (Kremkau, Whelan, et al. 2014) and responses were not included in the Phase I report. The BLM sent the consulting tribes a copy of the ethnographic literature review, as well as the research design (Kremkau, Stanton, et al 2014) for the Project prior to the field survey.

Representatives from the CRIT Office of Attorney General and CRIT Museum in Parker, Arizona met with SRI and First Solar on September 10, 2014 to discuss tribal participation in the field survey. On September 11, 2014, the BLM hosted a Project meeting that SRI, the CRIT Office of Attorney General, and the Mohave Elders Group attended. The field investigation was planned at this time and it was determined that a CRIT tribal monitor would be present throughout the field survey.

County consultation under Assembly Bill 52 (AB 52) is not applicable to the Project because the date of the NOP for the DQSP was March 12, 2015, prior to the effective date of AB 52 on July 1, 2015. Although formal consultation under AB 52 is not required, the County did consult with

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interested Tribes. Notices regarding the Project were mailed to 11 Tribes who had requested notifications regarding projects located within their Traditional Use Areas. No responses were received from the Cabazon Band of Mission Indians, the Cahuilla Band of Indians, Ramona Band, Rincon Band of Luiseno Indians, Colorado River Indian Tribes, Morongo Band or the Torres Martinez Band of Cahuilla Indians. A response was received dated September 12, 2016 from the Pechanga Band of Luiseno Indians deferring to closer tribes. Three Tribes requested consultation. Details of this consultation are presented in Section 6.3.4.

3.5.1.6.6 Field Inventory Investigations

The SRI field investigation of the DQSP Project area occurred from October 2014 to December 2014. SRI conducted an intensive pedestrian survey of the 5,010 acre Project area. Following the guidelines in Section 8110 of the BLM Manual, the Class III survey was an intensive pedestrian survey designed to identify all cultural properties "locatable from surface and exposed profile indications" within the "target area" defined by the Project disturbance areas (BLM 2004:19); this included the direct APE. The indirect APE was surveyed for built environment resources. The survey of the direct APE was conducted by qualified seven-person survey teams, each led by a qualified crew chief. A maximum survey interval of 15 m was employed, although crew members frequently walked between transect lines to record isolated artifacts and sites. After the initial pedestrian survey phase, site-recording teams of three people returned to the identified sites to record them in greater detail. A tribal monitor from CRIT was present throughout the survey and the site recordation.

During the field survey, SRI identified 277 archaeological sites and 620 isolated sites (isolates) within the Project area (Table 3.5-1). An archaeological site was defined as any three or more artifacts found in association with one another. Isolates were defined as one or two artifacts or any group of artifacts more than three, if these artifacts could refit (e.g., a ceramic "pot drop" or a broken glass bottle), or from a cluster of shell casings from emptying a clip. One or two artifacts found in association with one another were treated as isolated finds. All sites were recorded on Department of Parks and Recreation (DPR) forms and submitted to the EIC for assignment of permanent trinomials. All isolated finds were recorded using DPR 523 forms, and at least one photograph was taken of each.

The archaeological sites include 88 prehistoric sites, 181 historical-period sites, and 8 multicomponent sites. Of the prehistoric sites, these contained 59 thermal features, 7 ceramic scatters, 2 combined ceramic/lithic scatters, 16 lithic scatters, 1 rock feature, and 3 trail segments. The majority of the thermal features included associated artifacts. The historical-period sites consist of 2 temporary camps, 9 trails/roads, 3 wells, 157 debris scatters, 5 communication wire dump sites, 2 survey marker sites, 1 guy wire, 1 set of tank tracks, and 1 military emplacement. Of the multicomponent sites, 7 were prehistoric artifact and historic debris scatters, and 1 was a prehistoric rock feature with a historic debris scatter.

In addition to the surveyed sites, an additional 10 sites and one isolate previously surveyed and located in the Project vicinity were identified. The 10 additional sites are also listed in Table 3.5-1. This includes 4 prehistoric sites, 5 historic sites, and 1 multicomponent site. Of the prehistoric sites, these contained 1 thermal feature, 1 rock feature, and 2 geoglyph/petroglyph sites. The historical-period sites consist of 3 debris scatters and 2 transmission lines. The

multicomponent site was a trail with debris scatter. Of the 10 additional sites, 2 are listed, 5 are determined to be eligible, 3 are determined to be not eligible.

According to the current ROW configuration, 19 eligible sites fall within the Project area and may also be impacted by the Project through direct or indirect impacts. All of the archaeological sites are located on land managed by the BLM. Based on Appendix B in the Addendum of the SRI report, two of the sites which make up the Mule Tank Discontiguous Rock Art District are listed on the NRHP.

Table 3.5-1. Archaeological Sites Within the APE

Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-000673	CA-RIV-673	Not surveyed by SRI	Multicomponent	Trails; debris scatter	BLM	Eligible
33-001822	CA-RIV-1822	Not surveyed by SRI	Prehistoric	Thermal rock feature with ceramic scatter	BLM	Eligible
33-011110	-	Not surveyed by SRI	Historic	Transmission Line	BLM	Eligible
33-012532	CA/RIV-7127H	Not surveyed by SRI	Historic	Transmission Line	BLM	Eligible
33-014148	-	Not surveyed by SRI	Historic	Debris scatter	BLM	Not eligible
33-014174	-	Not surveyed by SRI	Historic	Debris scatter	BLM	Not eligible
33-019797	CA-RIV-10080	Not surveyed by SRI	Historic	Debris scatter	BLM	Not eligible
33-000504	CA-RIV-504	Not surveyed by SRI	Prehistoric	petroglyph	BLM	Listed
33-000773	CA-RIV-773	Not surveyed by SRI	Prehistoric	Geoglyph/intaglio	BLM	Listed
33-23456	CA-RIV-011990		Prehistoric	Rock feature with artifact scatter	BLM	Eligible
33-024804	CA-RIV-12294	SRI-2	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024678	CA-RIV-12209	SRI-3	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024805	CA-RIV-12295	SRI-7	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024810	CA-RIV-12300	SRI-9	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024719	CA-RIV-12240	SRI-17	Prehistoric, Patayan II	Thermal rock features with lithic scatter	BLM	Eligible

Table 3.5-1. Archaeological Sites Within the APE

Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-024806	CA-RIV-12296	SRI-18	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024807	CA-RIV-12297	SRI-19	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024808	CA-RIV-12298	SRI-21	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024809	CA-RIV-12299	SRI-25	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024270	CA-RIV-11924	SRI-26	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024271	CA-RIV-11925	SRI-27	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024272	CA-RIV-11926	SRI-29	Prehistoric	Rock feature with associated artifacts	BLM	Not eligible
33-024273	CA-RIV-11927	SRI-36	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024308	CA-RIV-11962	SRI-42	Historic, Post-1944	Wells and associated artifacts	BLM	Not eligible
33-024274	CA-RIV-11928	SRI-52	Prehistoric, Patayan I/II	Ceramic and lithic scatter	BLM	Not eligible
33-024275	CA-RIV-11929	SRI-58	Prehistoric	Thermal rock features with associated artifacts	BLM	Not eligible
33-024276	CA-RIV-11930	SRI-61	Prehistoric	Thermal rock feature with associated artifact	BLM	Not eligible
33-024277	CA-RIV-11931	SRI-63	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024278	CA-RIV-11932	SRI-65	Prehistoric, Patayan III	Thermal rock features with associated artifacts	BLM	Not eligible
33-024279	CA-RIV-11933	SRI-69	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024280	CA-RIV-11934	SRI-71	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024281	CA-RIV-11935	SRI-75	Prehistoric	Thermal rock features with associated artifact	BLM	Not eligible
33-024282	CA-RIV-11936	SRI-81	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024283	CA-RIV-11937	SRI-83	Prehistoric, Patayan II/III	Thermal rock features with associated artifacts	BLM	Eligible
33-024284	CA-RIV-11938	SRI-96	Historic	Road/Trail	BLM	Not eligible
33-024309	CA-RIV-11963	SRI-119	Historic, 1942-1944	Communication wire	BLM	Not eligible
33-024310	CA-RIV-11965	SRI-120	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024311	CA-RIV-11966	SRI-121	Historic	Road/Trail	BLM	Not eligible
33-024312	CA-RIV-11967	SRI-122	Historic	Road/Trail	BLM	Not eligible

Table 3.5-1. Archaeological Sites Within the APE

Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-024285	CA-RIV-11939	SRI-124	Prehistoric, Patayan II	Thermal rock feature with ceramic scatter	BLM	Not eligible
33-024286	CA-RIV-11940	SRI-125	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024287	CA-RIV-11941	SRI-129	Historic	Road/Trail	BLM	Not eligible
33-024288	CA-RIV-11942	SRI-132	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024289	CA-RIV-11943	SRI-133	Prehistoric, Patayan III	Thermal rock feature with associated artifacts	BLM	Not eligible
33-024290	CA-RIV-11944	SRI-134	Prehistoric	Thermal rock feature with lithic scatter	BLM	Not eligible
33-024291	CA-RIV-11945	SRI-137	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024292	CA-RIV-11946	SRI-138	Historic	Debris scatter	BLM	Not eligible
33-024293	CA-RIV-11947	SRI-147	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024294	CA-RIV-11948	SRI-1001	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024295	CA-RIV-11949	SRI-1009	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024296	CA-RIV-11950	SRI-1011	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024297	CA-RIV-11951	SRI-1014	Prehistoric, Patayan II	Thermal rock feature with associated artifacts	BLM	Not eligible
33-024298	CA-RIV-11952	SRI-1021	Historic	Debris scatter	BLM	Not eligible
33-024299	CA-RIV-11953	SRI-1024	Historic, Pre-1942	Campfire with artifact concentration	BLM	Not eligible
33-024300	CA-RIV-11954	SRI-1025	Prehistoric	Fire affected rock (FAR) scatter	BLM	Not eligible
33-024301	CA-RIV-11955	SRI-1035	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024302	CA-RIV-11956	SRI-1037	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024303	CA-RIV-11957	SRI-1043	Prehistoric	Thermal rock feature with associated artifact	BLM	Not eligible
33-024304	CA-RIV-11958	SRI-1049	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024305	CA-RIV-11959	SRI-1053	Prehistoric, Patayan III	Thermal rock features with associated artifacts	BLM	Not eligible
33-024306	CA-RIV-11960	SRI-1056	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024307	CA-RIV-11961	SRI-1058	Prehistoric, Patayan I/II	Thermal rock features with associated artifacts	BLM	Not eligible

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Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-024357	CA-RIV-11991	SRI-1061	Prehistoric, Patayan I/II	Ceramic scatter	BLM	Not eligible
33-024358	CA-RIV-11992	SRI-1070	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024313	CA-RIV-11968	SRI-1076	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024314	CA-RIV-11969	SRI-2001	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024315	CA-RIV-11970	SRI-2007	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024316	CA-RIV-11971	SRI-2008	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024317	CA-RIV-11972	SRI-2009	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024359	CA-RIV-11993	SRI-2014	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024360	CA-RIV-11994	SRI-2017	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024361	CA-RIV-11995	SRI-2021	Prehistoric, Patayan II/III	Thermal rock features with associated artifacts	BLM	Eligible
33-024362	CA-RIV-11996	SRI-2023	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024363	CA-RIV-11997	SRI-2029	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024318	CA-RIV-11973	SRI-2030	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024319	CA-RIV-11974	SRI-2034	Prehistoric	Thermal rock feature	BLM	Not eligible
33-024364	CA-RIV-11998	SRI-2035	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024365	CA-RIV-11999	SRI-2042	Prehistoric	Lithic scatter	BLM	Not eligible
33-024366	CA-RIV-12000	SRI-2051	Historic	Road/Trail	BLM	Not eligible
33-024320	CA-RIV-11975	SRI-2066	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024367	CA-RIV-12001	SRI-2067	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024368	CA-RIV-12002	SRI-2068	Multicomponent	Artifact and debris scatter	BLM	Not eligible
33-024321	CA-RIV-11976	SRI-2082	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024322	CARIV-11977	SRI-2088	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024323	CA-RIV-11978	SRI-2094	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024324	CA-RIV-11979	SRI-2098	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024325	CA-RIV-11980	SRI-2100	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024369	CA-RIV-12003	SRI-2128	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024370	CA-RIV-12004	SRI-2135	Historic, 1942-1944	Military pits	BLM	Not eligible
33-024371	CA-RIV-12005	SRI-2136	Prehistoric, Patayan I/II	Ceramic scatter	BLM	Not eligible
33-024372	CA-RIV-12006	SRI-2329	Prehistoric, Patayan II	FAR scatter with associated artifacts	BLM	Not eligible
33-024355	CA-RIV-11989	SRI-2333	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024373	CA-RIV-12007	SRI-2582	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024326	CA-RIV-11981	SRI-3007	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024327	CA-RIV-11982	SRI-3010	Historic, Post-1944	Debris scatter	BLM	Not eligible

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33-024374	CA-RIV-12008	SRI-3014	Historic, Pre-1942	Campfire with debris scatter	BLM	Not eligible
33-024375	CA-RIV-12009	SRI-3015	Multicomponent	Artifact and debris scatter	BLM	Not eligible
33-024376	CA-RIV-12010	SRI-3017	Prehistoric	Thermal rock feature	BLM	Not eligible
33-024377	CA-RIV-12011	SRI-3019	Prehistoric, Patayan II	Thermal rock features with associated artifacts	BLM	Not eligible
33-024378	CA-RIV-12012	SRI-3020	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024379	CA-RIV-12013	SRI-3022	Prehistoric	Thermal rock feature with associated artifact	BLM	Not eligible
33-024380	CA-RIV-12014	SRI-3027	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024381	CA-RIV-12015	SRI-3029	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024382	CA-RIV-12016	SRI-3031	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024383	CA-RIV-12017	SRI-3037	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024384	CA-RIV-12018	SRI-3038	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024385	CA-RIV-12019	SRI-3039	Prehistoric	Thermal rock features	BLM	Eligible
33-024386	CA-RIV-12020	SRI-3040	Prehistoric	Thermal rock features with lithic scatter	BLM	Not eligible
33-024387	CA-RIV-12021	SRI-3041	Prehistoric	Thermal rock features with associated artifacts	BLM	Not eligible
33-024388	CA-RIV-12022	SRI-3042	Prehistoric	Thermal rock features with associated artifacts	BLM	Not eligible
33-024389	CA-RIV-12023	SRI-3045	Prehistoric	Thermal rock feature with associated artifacts	BLM	Not eligible
33-024390	CA-RIV-12024	SRI-3047	Prehistoric	Thermal rock feature	BLM	Not eligible
33-024423	CA-RIV-12055	SRI-3054	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024424	CA-RIV-12056	SRI-3057	Prehistoric	Lithic scatter	BLM	Not eligible
33-024425	CA-RIV-12057	SRI-3059	Prehistoric, Patayan II/III	Ceramic scatter	BLM	Not eligible
33-024426	CA-RIV-12058	SRI-3078	Historic, 1942-1944	Debris scatter	BLM	Not eligible

Table 3.5-1. Archaeological Sites Within the APE

Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-024349	CA-RIV-11983	SRI-3101	Prehistoric, Patayan I/II	Thermal rock feature with associated artifacts	BLM	Not eligible
33-024350	CA-RIV-11984	SRI-3103	Historic	Debris scatter	BLM	Not eligible
33-024351	CA-RIV-11985	SRI-3108	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024352	CA-RIV-11986	SRI-3115	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024353	CA-RIV-11987	SRI-3116	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024354	CA-RIV-11988	SRI-3117	Historic	Debris scatter	BLM	Not eligible
33-024427	CA-RIV-12059	SRI-3119	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024428	CA-RIV-12060	SRI-3123	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024429	CA-RIV-12061	SRI-3124	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024430	CA-RIV-12062	SRI-3127	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024431	CA-RIV-12063	SRI-3135	Prehistoric	Lithic scatter	BLM	Not eligible
33-024432	CA-RIV-12064	SRI-3147	Prehistoric	Lithic scatter	BLM	Not eligible
33-024433	CA-RIV-12065	SRI-3155	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024434	CA-RIV-12066	SRI-3156	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024435	CA-RIV-12067	SRI-3158	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024391	CA-RIV-12025	SRI-3175	Prehistoric	Thermal rock features	BLM	Not eligible
33-024436	CA-RIV-12068	SRI-3186	Prehistoric, Patayan II/III	Ceramic scatter	BLM	Not eligible
33-024437	CA-RIV-12069	SRI-3205	Prehistoric	Thermal rock feature	BLM	Not eligible
33-024392	CA-RIV-12026	SRI-3211	Prehistoric	Thermal rock features with associated artifacts	BLM	Not eligible
33-024438	CA-RIV-12070	SRI-3224	Prehistoric	Thermal rock feature	BLM	Not eligible
33-024439	CA-RIV-12071	SRI-3228	Prehistoric, Patayan II/III	Ceramic and lithic scatter	BLM	Not eligible
33-024393	CA-RIV-12027	SRI-3237	Prehistoric	Thermal rock features	BLM	Eligible
33-024394	CA-RIV-12028	SRI-3255	Prehistoric	Trail	BLM	Eligible
33-024395	CA-RIV-12029	SRI-3256	Multicomponent	Artifact and debris scatter	BLM	Not eligible
33-024396	CA-RIV-12030	SRI-3260	Multicomponent	Artifact and debris scatter	BLM	Not eligible
33-024440	CA-RIV-12072	SRI-3306	Prehistoric	Lithic scatter	BLM	Not eligible
33-024441	CA-RIV-12073	SRI-3331	Prehistoric	Thermal rock feature	BLM	Not eligible

Table 3.5-1. Archaeological Sites Within the APE

Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-024442	CA-RIV-12074	SRI-3487	Prehistoric	Thermal rock features with associated artifacts	BLM	Not eligible
33-024397	CA-RIV-12031	SRI-4004	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024398	CA-RIV-12032	SRI-4005	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024443	CA-RIV-12075	SRI-4014	Prehistoric	Thermal rock features	BLM	Not eligible
33-024444	CA-RIV-12076	SRI-4016	Prehistoric, Patayan II	Thermal rock feature with associated artifacts	BLM	Not eligible
33-024445	CA-RIV-12077	SRI-4017	Multicomponent	Rock feature and debris scatter	BLM	Not eligible
33-024446	CA-RIV-12078	SRI-4019	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024447	CA-RIV-12079	SRI-4024	Prehistoric	Lithic scatter	BLM	Not eligible
33-024448	CA-RIV-12080	SRI-4028	Historic	Debris scatter	BLM	Not eligible
33-024449	CA-RIV-12081	SRI-4034	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024450	CA-RIV-12082	SRI-4041	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024399	CA-RIV-12033	SRI-4045	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024451	CA-RIV-12083	SRI-4054	Prehistoric	Thermal rock feature with associated artifacts	BLM	Not eligible
33-024452	CA-RIV-12084	SRI-4056	Prehistoric	Thermal rock features with lithic scatter	BLM	Not eligible
33-024453	CA-RIV-12085	SRI-4060	Multicomponent	Artifact and debris scatter	BLM	Not eligible
33-024454	CA-RIV-12086	SRI-4063	Prehistoric	Thermal rock feature with associated artifacts	BLM	Not eligible
33-024455	CA-RIV-12087	SRI-4078	Prehistoric, Patayan II	Ceramic scatter	BLM	Not eligible
33-024456	CA-RIV-12088	SRI-4079	Prehistoric	Thermal rock features with associated artifacts	BLM	Not eligible
33-024457	CA-RIV-12089	SRI-4080	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024458	CA-RIV-12090	SRI-4084	Prehistoric	FAR scatter with associated artifacts	BLM	Not eligible
33-024459	CA-RIV-12091	SRI-4085	Prehistoric, Patayan III	Thermal rock features	BLM	Eligible
33-024460	CA-RIV-12092	SRI-4098	Historic	Debris scatter	BLM	Not eligible

Table 3.5-1. Archaeological Sites Within the APE

Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-024400	CA-RIV-12034	SRI-4116	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024401	CA-RIV-12035	SRI-4127	Historic	Debris scatter	BLM	Not eligible
33-024402	CA-RIV-12036	SRI-4145	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024403	CA-RIV-12037	SRI-4151	Historic	Debris scatter	BLM	Not eligible
33-024404	CA-RIV-12038	SRI-4160	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024405	CA-RIV-12039	SRI-4162	Historic, 1942-1944	Communication wire	BLM	Not eligible
33-024406	CA-RIV-12040	SRI-4167	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024461	CA-RIV-12093	SRI-4175	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024462	CA-RIV-12094	SRI-4178	Historic	Debris scatter	BLM	Not eligible
33-024463	CA-RIV-12095	SRI-4180	Historic, 1942-1944	Guy wire	BLM	Not eligible
33-024464	CA-RIV-12096	SRI-4182	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024465	CA-RIV-12097	SRI-4185	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024466	CA-RIV-12098	SRI-4186	Historic	Debris scatter	BLM	Not eligible
33-024467	CA-RIV-12099	SRI-4191	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024468	CA-RIV-12100	SRI-4196	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024469	CA-RIV-12101	SRI-4208	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024470	CA-RIV-12102	SRI-4217	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024471	CA-RIV-12103	SRI-4222	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024472	CA-RIV-12104	SRI-4229	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024473	CA-RIV-12105	SRI-4231	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024474	CA-RIV-12106	SRI-4235	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024475	CA-RIV-12107	SRI-4236	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024476	CA-RIV-12108	SRI-4241	Prehistoric	Thermal rock features with lithic scatter	BLM	Eligible
33-024477	CA-RIV-12109	SRI-4242	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024478	CA-RIV-12110	SRI-4248	Historic	Debris scatter	BLM	Not eligible
33-024479	CA-RIV-12111	SRI-4250	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024407	CA-RIV-12041	SRI-5000	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024408	CA-RIV-12042	SRI-5003	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024409	CA-RIV-12043	SRI-5006	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024410	CA-RIV-12044	SRI-5008	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024480	CA-RIV-12112	SRI-5029	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024481	CA-RIV-12113	SRI-5034	Prehistoric	Thermal rock feature with associated artifacts	BLM	Not eligible
33-024482	CA-RIV-12114	SRI-5035	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024483	CA-RIV-12115	SRI-5054	Prehistoric	Thermal rock feature with associated artifact	BLM	Not eligible
33-024411	CA-RIV-12045	SRI-5063	Historic	Survey marker	BLM	Not eligible

Table 3.5-1. Archaeological Sites Within the APE

Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-024412	CA-RIV-12046	SRI-5067	Prehistoric	Thermal rock features with lithic scatter	BLM	Not eligible
33-024413	CA-RIV-12047	SRI-5070	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024414	CA-RIV-12048	SRI-5073	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-024415	CA-RIV-12049	SRI-5076	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024484	CA-RIV-12116	SRI-5083	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024485	CA-RIV-12117	SRI-5087	Historic	Debris scatter	BLM	Not eligible
33-024486	CA-RIV-12118	SRI-5099	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024487	CA-RIV-12119	SRI-5106	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024488	CA-RIV-12120	SRI-5132	Historic	Debris scatter	BLM	Not eligible
33-024489	CA-RIV-12121	SRI-5135	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024416	CA-RIV-12050	SRI-6003	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024417	CA-RIV-12051	SRI-6005	Historic	Debris scatter	BLM	Not eligible
33-024490	CA-RIV-12122	SRI-6011	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024491	CA-RIV-12123	SRI-6017	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024492	CA-RIV-12124	SRI-6018	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024493	CA-RIV-12125	SRI-6021	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024494	CA-RIV-12126	SRI-6022	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024495	CA-RIV-12127	SRI-6023	Prehistoric, Patayan II	Thermal rock features with associated artifacts	BLM	Not eligible
33-024496	CA-RIV-12128	SRI-6033	Prehistoric	Thermal rock features with lithic scatter	BLM	Eligible
33-024497	CA-RIV-12129	SRI-6034	Prehistoric, Patayan II/III	Thermal rock features with associated artifacts	BLM	Eligible
33-024498	CA-RIV-12130	SRI-6046	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024418	CA-RIV-12052	SRI-6053	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024499	CA-RIV-12131	SRI-6059	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024419	CA-RIV-12053	SRI-6075	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024500	CA-RIV-12132	SRI-6081	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024501	CA-RIV-12133	SRI-6087	Historic	Debris scatter	BLM	Not eligible
33-024502	CA-RIV-12134	SRI-6096	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024503	CA-RIV-12135	SRI-6100	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024504	CA-RIV-12136	SRI-6104	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024505	CA-RIV-12137	SRI-6114	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024506	CA-RIV-12138	SRI-6115	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024507	CA-RIV-12139	SRI-6119	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024508	CA-RIV-12140	SRI-6471	Prehistoric	FAR scatter	BLM	Not eligible

Table 3.5-1. Archaeological Sites Within the APE

Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-024509	CA-RIV-12141	SRI-6491	Prehistoric	Lithic scatter	BLM	Not eligible
33-024510	CA-RIV-12142	SRI-7008	Prehistoric, Patayan II	Thermal rock features with associated artifacts	BLM	Not eligible
33-024511	CA-RIV-12143	SRI-7009	Prehistoric	Thermal rock feature	BLM	Not eligible
33-024512	CA-RIV-12144	SRI-7010	Prehistoric	Thermal rock feature with associated artifacts	BLM	Not eligible
33-024513	CA-RIV-12145	SRI-7018	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024514	CA-RIV-12146	SRI-7019	Prehistoric	Lithic scatter	BLM	Not eligible
33-024515	CA-RIV-12147	SRI-7020	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024420	CA-RIV-12054	SRI-7024	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024516	CA-RIV-12148	SRI-7029	Prehistoric	Thermal rock feature	BLM	Not eligible
33-024517	CA-RIV-12149	SRI-7031	Prehistoric, Patayan II	Thermal rock features with associated artifacts	BLM	Not eligible
33-024518	CA-RIV-12150	SRI-7040	Prehistoric	Thermal rock feature with associated artifact	BLM	Not eligible
33-024519	CA-RIV-12151	SRI-7060	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-024520	CA-RIV-12152	SRI-7065	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024521	CA-RIV-12153	SRI-7066	Prehistoric	Thermal rock features with lithic scatter	BLM	Not eligible
33-024522	CA-RIV-12154	SRI-7072	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024523	CA-RIV-12155	SRI-7074	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-024524	CA-RIV-12156	SRI-7076	Historic, 1942-1944	Communication wire	BLM	Not eligible
33-024525	CA-RIV-12157	SRI-7087	Historic, 1942-1944	Communication wire	BLM	Not eligible
33-024526	CA-RIV-12158	SRI-8085	Historic, Pre-1942	Survey markers with associated linear features and artifacts	BLM	Not eligible
33-024818	CA-RIV-12307	SRI-9016	Historic, Post-1944	Well	BLM	Not eligible
33-024813	CA-RIV-12303	SRI-9018	Historic, Post-1944	Well	BLM	Not eligible
33-024817	CA-RIV-12306	SRI-9020	Historic	Road/Trail	BLM	Not eligible
33-000343	CA-RIV-343	SRI-9003	Prehistoric	Trail	BLM	Eligible
33-000772	CA-RIV-772	SRI-110	Prehistoric	Trail	BLM	Eligible

Table 3.5-1. Archaeological Sites Within the APE

Primary Number	Trinomial	Temporary Number	Age	Description	Land Ownership	NRHP / CRHR Eligibility Status
33-001821	CA-RIV-1821	SRI-8020	Prehistoric	Thermal rock features with associated artifacts	BLM	Eligible
33-002795	CA-RIV-2795	SRI-3149	Prehistoric	Lithic scatter	BLM	Not eligible
33-002796	CA-RIV-2796	SRI-6523	Prehistoric	Lithic scatter	BLM	Not eligible
33-008133	CA-RIV-6043	SRI-16	Prehistoric	Lithic scatter	BLM	Not eligible
33-008134	CA-RIV-6044	SRI-6025	Prehistoric, Patayan II	Ceramic scatter	BLM	Not eligible
33-013660	-	SRI-3273	Prehistoric	Thermal rock features with associated artifacts	BLM	Not eligible
33-014147	-	SRI-101	Historic, 1942-1944	Communication wire	BLM	Not eligible
33-014151	-	SRI-3408	Prehistoric, Patayan II/III	Ceramic scatter	BLM	Not eligible
33-014173	CA-RIV-9097	SRI-9013	Historic	Road/Trail	BLM	Not eligible
33-014198	-	SRI-1073	Historic, Pre-1942	Debris scatter	BLM	Not eligible
33-014199	CA-RIV-9098	SRI-107	Historic	Road/Trail	BLM	Not eligible
33-017317	CA-RIV-9007	SRI-6519	Prehistoric	Lithic scatter	BLM	Not eligible
33-017328	-	SRI-1068	Historic, Pre-1942	Road/Trail	BLM	Not eligible
33-018675	CA-RIV-10077	SRI-2668	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-018852	CA-RIV-9648	SRI-5108	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-018853	CA-RIV-9649	SRI-146	Historic	Debris scatter	BLM	Not eligible
33-019021	CA-RIV-9810	SRI-5109	Prehistoric	Lithic scatter	BLM	Not eligible
33-019618	CA-RIV-9935	SRI-127	Multicomponent	Artifact and debris scatter	BLM	Eligible
33-019733	CA-RIV-10047	SRI-4207	Prehistoric	Lithic scatter	BLM	Not eligible
33-019734	CA-RIV-10048	SRI-4173	Multicomponent	Artifact and debris scatter	BLM	Not eligible
33-019735	CA-RIV-10049	SRI-4172	Prehistoric	Lithic scatter	BLM	Not eligible
33-019736	CA-RIV-10050	SRI-4211	Historic	Debris scatter	BLM	Not eligible
33-019739	CA-RIV-10053	SRI-139	Prehistoric	Lithic scatter	BLM	Not eligible
33-019740	CA-RIV-10054	SRI-2113	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-019741	CA-RIV-10055	SRI-4203	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-019742	CA-RIV-10056	SRI-4209	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-019743	CA-RIV-10057	SRI-5122	Historic, 1942-1944	Debris scatter	BLM	Not eligible
33-021132	CA-RIV-10964	SRI-1010	Historic, Post-1944	Debris scatter	BLM	Not eligible
33-021264	CA-RIV-11057	SRI-2322	Historic, 1942-1944	Tank tracks	BLM	Not eligible
33-078916	CA-RIV-10078	SRI-140	Historic, 1942-1944	Debris scatter	BLM	Not eligible

SRI recorded 620 isolated finds within the Project area, and 1 additional isolate was identified by BLM. The isolates included 463 historical-period isolates and 158 prehistoric isolates. Due to the

large number of isolates, they were not listed in detail in the Phase I report, only summarized in tabular form. Historical-period isolates observed included ration cans, food/beverage cans, jars, bottles, shell shirt buttons, ammunition, a grenade, an ammunition door, tools, wire, utensils, and oil filters. The prehistoric isolates consist of 86 pot drops and 71 flaked stone artifacts, such as flakes, tested cobbles, a projectile point, hammerstones, and choppers. One chert projectile point, possibly a Gypsum point, was recorded on the southeastern edge of the Project. The pot drops contained a range of ceramic types and they consisted of anywhere from two to 87 sherds. If additional ceramic sherds are located in a shallow subsurface context, that would not change the eligibility determination.

Isolated artifacts are usually not eligible for listing on the NRHP due to their limited potential for further research and their lack of context and integrity. However, in some cases isolated resources could be a clue for construction monitors' awareness to possible hidden subsurface cultural resources.

Survey for Built-Environment Resources

Fourteen built-environment resources were identified, including two transmission lines, nine trails/roads, and three wells. The two transmission lines were identified within the indirect APE along the southeastern boundary of the DQSP. These lines are the Pilot Knob–Blythe 161-kV transmission line (P-33-11110) and the Blythe–Niland 161-kV transmission line (P-33-012532/CA-RIV-7127H). The Pilot Knob–Blythe 161-kV transmission line (P-33-11110) is a 64.4-mile-long line made of H-frame wooden poles built in 1951 that parallels the 2-mile-long boundary of the DQSP. The Blythe–Niland 161-kV transmission line (P-33-012532/CA-RIV-7127H) is a line of similar wooden-pole H-frame construction built in the 1940s and 1950s and located in the same corridor. Both transmission lines have been determined eligible for listing in the NRHP and CRHR. The nine trails/roads and three wells have been determined to not be eligible for listing in the NRHP and CRHR.

Landscape-level Studies and Geoarchaeological Investigations

SRI utilized soil survey maps, landform age, landscape features, depositional environments, and a previous geoarchaeological investigation and site sensitivity mapping project to analyze the sensitivity for buried deposits within the Project area. The project used was ASM's 1998 Class II survey of the Palo Verde Mesa and Palo Verde Valley Catellus/BLM Land Exchange Project, which covered a portion of the current Project area (McDonald and Schaefer 1998). ASM examined geomorphology and site density from their study area to create a site sensitivity model for the region. The model has four levels of sensitivity- high, medium, low, and none. ASM assigned the high level to area near rock outcroppings in the upland areas of the valley, roads, and springs. Medium level of sensitivity included slopes near the high level. The late Holocene alluvial formations were assigned a low level of sensitivity. Finally, no sensitivity levels were given to active dunes or areas disturbed by agriculture.

SRI employed the ASM model when analyzing the DQSP Project area. However, after factoring in the soil survey map, landform ages, and landscape features, such as arroyos or playas, ASM's model was found to be inaccurate within DQSP. SRI identified five soil series types within the Project area: Aco, Carrizo, Chuckawalla, Orita, and Rositas. The Chuckawalla series retains a low sensitivity, while the Aco and Carrizo series have a moderate sensitivity. The majority of the

Project area contains the Aco soil series, while the Chuckwalla and Carrizo soil series are limited to the north of the Project. The Orita and Rositas soil series were identified with a high potential for buried deposits. The highly sensitivity Orita soil series was found within the central portion of the Project site, while the Rositas series is only within the northern portion of the Project. Within the Rositas soil series, buried cultural deposits may be found at 150 cm or more below the surface, while cultural deposits may be encountered at 50 to 60 cm below the surface in the Orita series (Lerch et al. 2016). Further investigations, such as geoarchaeological trenching of the Rositas and Orita soil series, would be completed to confirm the subsurface sensitivity assessments for cultural resources.

Tribal Cultural Resources

Tribal cultural resources (TCRs) include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. To qualify as a TCR, the resource must either: (1) be listed on, or be eligible for listing on, the California Register of Historical Resources or other local historic register; or (2) constitute a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC § 21074(a)(2)). Native American tribes that are traditionally and culturally affiliated with a geographic area can provide lead agencies with expert knowledge of TCRs.

Although formal consultation under Assembly Bill 52 (AB 52) is not required, the County did consult with interested Tribes. In a letter dated November 18, 2016, the Tribal Historic Preservation Office (THPO) of the Twenty-Nine Palms Band of Mission Indians described the Project as being located within the boundary of its Traditional Use Area. The Tribe requested ongoing consultation associated with the archaeological sites determined to be eligible and possibly eligible for the NRHP and CRHR, as well as a culturally sensitive site crossed by the Project, and a culturally sensitive area in the vicinity of the Project. In a letter dated May 16, 2018, the Tribe described the culturally sensitive site and the culturally sensitive area as TCRs that have a cultural value to the Tribe.

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3.6 Environmental Justice

This section provides an overview of the applicable policies, regulations, and existing conditions for environmental justice, or ". . . the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (BLM 2005). The study area is defined by the boundaries of several planning areas for which demographic data are available and which encompass the potentially affected area for environmental justice, including communities for which human health and safety impacts may exist. Data on minority populations and low income populations who may be impacted by the Project are provided for these planning areas, including the City of Blythe, nearby Census County Divisions (Chuckwalla Valley and Blythe), and Riverside County for regional context.

3.6.1 Environmental Setting

The Project site is located in Chuckwalla Census County Division (CCD) (a county subdivision defined by the U.S. Census) in eastern Riverside County, approximately 2.75 miles west of the City of Blythe. The site and its immediately adjoining areas are vacant, with no existing population. Data on minority populations and incidence of poverty are provided for Riverside County, Chuckwalla Valley CCD, Blythe CCD, and the City of Blythe. Chuckwalla Valley CCD and Blythe CCD together correspond generally to "Eastern Riverside County," as defined in the Riverside County General Plan (Riverside County 2015a).

Chuckwalla Valley CCD is a sparsely populated, rural area of Riverside County, bordered by the Coachella Valley to the west and Blythe CCD and the California-Arizona border to the east. Its largest population center consists of two state prisons (Ironwood and Chuckawalla Valley State Prisons), which have been annexed to the City of Blythe, and its largest non-institutional community is Desert Center, located approximately 37 miles west of the Project site. Blythe CCD includes the City of Blythe, community of Ripley, and the surrounding agricultural areas, but excludes the two state prisons.

La Paz County in Arizona is located east of Blythe CCD. Its largest cities are Parker and Quartzsite; the community of Ehrenberg is also located in the County, 4 miles east of Blythe and across the Colorado River. The Colorado River Indian Reservation is located mostly in La Paz County and partly in Riverside County. The Reservation extends along the river north of Ehrenberg and includes the City of Parker. Although most of the Reservation would be unaffected by the Project, demographic and income data have been included, since sections of the Reservation are located in Blythe CCD.

The environmental justice analysis discusses the populations residing in U.S. Census tracts 459, 461.01, 461.02, 461.03, 462, 469, 9810, Blythe City, Blythe CCD, Chuckwalla CCD, and the Colorado River Indian Reservation (see Figure 3.6-1).

3.6.1.1 Minority Populations

According to the Council on Environmental Quality (CEQ), minority individuals are defined as members of the following groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black/African-American, not of Hispanic origin; or Hispanic (of any race). A minority

population, for the purposes of environmental justice, is identified when the minority population of the potentially affected area is greater than 50 percent or meaningfully greater than the percentage of the minority population in the general population or other appropriate unit of geographical analysis (CEQ 1997). According to the CEQ guidelines, "minority" is defined as all persons except non-Hispanic whites. In other words, minority is defined as all racial groups other than white, and all persons of Hispanic origin, regardless of race.

Table 3.6-1 presents the minority population composition of the planning areas surrounding the Project site and other regional data for context, based on the 2009-2013 American Community Survey. Data are provided for U.S. Census tracts 459, 461.01, 461.02, 461.03, 462, 469, 9810, Blythe City, Blythe CCD, Chuckwalla CCD, and the Colorado River Indian Reservation, as well as Riverside and La Paz Counties.

The Chuckwalla Valley CCD, in which the Project is located, has a minority population, defined as racial or ethnic groups other than non-Hispanic White, of 76.7 percent of the population. This percentage is higher than Riverside County as a whole (61.7 percent) and the Blythe CCD (68.5 percent), but is similar to the percentage for the City of Blythe (71.9 percent). Only one of the areas, CT470, had a minority population lower than 50 percent of the total population.

Table 3.6-1. Racial and Income Characteristics for Residents within the Study Area

	Riverside County, CA	CT459	CT461.01	CT461.02	CT461.03	CT462	CT469 (a)	CT470	CT9810 (b)	Blythe City, CA (c)	Blythe CCD, CA (d)	Chuck-walla Valley CCD, CA	La Paz County, AZ	Colorado River Indian Reser-vation, AZ-CA (e)
Total Population	2,266,899	1,577	3,525	2,205	2,904	3,857	2,684	1,711	6,224	20,101	15,779	9,056	20,348	9,188
Hispanic or Latino (All Races)	46.5%	71.3%	48.1%	69.3%	52.0%	70.1%	46.5%	30.0%	52.3%	53.9%	57.5%	49.8%	24.8%	35.5%
Non-Hispanic														
White	38.3%	27.1%	39.9%	18.4%	39.0%	14.8%	33.5%	60.6%	17.4%	28.1%	31.5%	23.3%	60.9%	32.8%
Black or African American	5.9%	1.5%	10.6%	11.0%	3.0%	14.0%	14.3%	6.0%	22.2%	13.6%	8.7%	19.5%	0.2%	0.5%
American Indian and Alaska Native	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	2.0%	0.6%	0.0%	1.7%	12.4%	27.7%
Asian	5.9%	0.0%	0.7%	1.0%	6.0%	0.5%	1.5%	2.4%	2.0%	2.1%	1.8%	1.8%	0.7%	1.2%
Native Hawaiian And Other Pacific Islander	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.5%	0.3%	0.1%	0.1%	0.6%	0.2%	0.3%
Some Other Race	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Two or More Races	2.4%	0.0%	0.7%	0.3%	0.1%	0.7%	2.5%	0.4%	3.8%	1.5%	0.4%	3.3%	0.9%	2.0%

Table 3.6-1. Racial and Income Characteristics for Residents within the Study Area

	Riverside County, CA	CT459	CT461.01	CT461.02	CT461.03	CT462	CT469 (a)	CT470	CT9810 (b)	Blythe City, CA (c)	Blythe CCD, CA (d)	Chuck-walla Valley CCD, CA	La Paz County, AZ	Colorado River Indian Reser-vation, AZ-CA (e)
Percent Minority (Other Than Non-Hispanic White)	61.7%	72.9%	60.1%	81.6%	61.0%	85.2%	66.5%	39.4%	82.6%	71.9%	68.5%	76.7%	39.1%	67.2%
Percent of People Below Poverty Level	16.9%	58.9%	19.8%	38.7%	5.5%	36.9%	20.1%	20.8%	n.a.	23.2%	24.3%	19.2%	18.4%	21.5%

Note:
n.a. – The American Community Survey does not define poverty for institutionalized persons.
(a) Excludes Ironwood and Chuckawalla Valley State Prisons.
(b) Census tract covers Ironwood and Chuckawalla Valley State Prisons only.
(c) Incorporated Blythe City; includes the state prisons.
(d) Excludes the state prisons.
(e) Includes portions of California and Arizona.
Source: U.S. Census Bureau 2014a and 2014b.

3.6.1.2 Low-Income Populations

For the purposes of this analysis, the density used to identify minority populations (i.e., 50 percent or greater) was also used as a minimum to identify low-income populations. In addition, a local population is judged to be "meaningfully greater" than the general population (i.e., Riverside County as a whole) if the proportion of individuals living under the poverty line is simply greater than that of the general population, providing for a conservative analysis.

For this analysis, proportions of people living in poverty were obtained from the 2009-2013 American Community Survey. The U.S. Census Bureau defines poverty using standards set by the U.S. Office of Management and Budget's Statistical Policy Directive 14 (U.S. Office of Management and Budget 1978; U.S. Census Bureau 2016). Family income is compared to thresholds that vary according to family size, age, and number of children under 18 years old. If a family's total income is less than the applicable threshold, then every person in the family is considered to be in poverty. Poverty thresholds are the same for all geographic areas and are adjusted annually by the Consumer Price Index. The U.S. Census Bureau does not define poverty status for institutionalized persons and others living in group quarters.

In 2013, the poverty threshold for a single person under 65 years of age was $12,119 and for a person 65 years and over was $11,173. For a four-person family with two children under 18 years of age, the poverty threshold was $23,624. Other thresholds are defined for different family sizes and compositions (U.S. Census Bureau 2014b).

As shown in Table 3.6-1, the Chuckwalla Valley CCD, in which the Project is located, has 19.2 percent of the population with income below the poverty level. This percentage is higher than Riverside County as a whole (16.9 percent), but lower than that of the Blythe CCD (24.3 percent) and the City of Blythe (23.2 percent). While none of the areas included in the analysis had a poverty rate exceeding 50 percent of the total population, all areas had a greater percentage of the population with income below the poverty level than Riverside County as a whole.

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3.7 Geology and Soil Resources

This section describes the existing regional and local geology and soil conditions, as well as regulatory framework in regards to geology and soil resources for the proposed Project and alternatives. This section identifies seismic hazards that could potentially affect structures associated with the Project to assist decision-makers in addressing regulatory concerns. The study area relevant to geology, soils, and geologic hazards is the physical footprint that would be associated with Project construction, operation and maintenance, and decommissioning. The study area relevant to faulting and seismic hazards includes the larger Southern California region, because distant faults can produce ground shaking and secondary seismic hazards at the Project area. The information in this section is based on existing maps and reports developed by the U.S. Geological Survey (USGS), California Geological Survey (CGS), U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), and the California Division of Mines and Geology (CDMG). This information was reviewed and summarized by the Applicant in their *Preliminary Geotechnical Investigation Report for the First Solar Development, Inc., Desert Quartzite Solar Project, Riverside County, California*, prepared by URS, 2011.

3.7.1 Environmental Setting

3.7.1.1 Regional Geology and Seismicity

The Project would be located on the Palo Verde Mesa in the Mojave Desert Geomorphic Province in Riverside County, California. This geomorphic province encompasses an area that extends from the Colorado River on the east, the San Andreas Fault on the west, and the Garlock Fault on the northwest. The province is generally characterized by broad alluvial valleys separated by steep, discontinuous, sub-parallel mountain ranges that generally trend northwest-southeast.

3.7.1.2 Local Geology

General Site Geology

A topographic map of the Project area is shown in Figure 2-7. The Palo Verde Mesa is characterized by a nearly level surface flanked by gently to moderately sloping alluvial fans. The geomorphology of the area is controlled by fluvial erosion and deposition.

The bedrock of the Palo Verde Mesa in the vicinity of the Project site is composed of Pre-Cretaceous metamorphosed sedimentary rocks in the northern portion of the site, and Precambrian granite, Jurassic volcanic rocks, and Jurassic plutonic rocks in the southern portion. Previous investigators (CGS 1994) mapped a pre-Quaternary thrust fault immediately to the southwest of the Project site, while more recent investigators (USGS 2006) present the geology of that area as consisting of Quaternary alluvial terraces of varying ages. The Precambrian to Mesozoic bedrock in the southwestern portion of the site is overlain by Tertiary age volcanics which were deposited between 5.3 and 34 million years before present. In the southeastern corner of the site, the bedrock is overlain by Pleistocene non-marine sediments.

A geologic map of the surficial geologic units is shown in Figure 3.7-1. Pleistocene and Holocene alluvium and dune sand overlays the older rocks throughout the site. Generalized descriptions of the surficial units encountered are described below.

- The largest portion of the site consists of Pleistocene age alluvial deposits of the ancestral Colorado River (designated Qpv). This unit consists of moderately indurated, poorly graded sand, gravel, boulders, silt, and clay.
- Holocene age alluvium associated with modern washes (designated Qw) has been mapped in the southwestern corner of the site. These deposits are comprised of unconsolidated sand and gravel eroded from nearby mountain ranges.
- Holocene age aeolian sand (designated Qs) has been mapped in the northwestern portion of the site, along the proposed route of the gen-tie line.
- Holocene age alluvial-fan and alluvial-valley deposits (designated Qa6) comprise the western portion of the Project site. This unit is characterized by unconsolidated sand, gravel, silt, and clay.

Soil Resources

The soil types present on the Project site are shown in Figure 3.7-2. The site is generally underlain by Quaternary age alluvium consisting of silty sands and gravels. The predominant soil types mapped by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) are the Rositas, Orita, Carrizo, and Aco series. These are generally coarse-grained soils, composed of gravel, sand, fine sand, and loam.

All soil types mapped on the site have a low potential for expansive soil characteristics, and for corrosion of concrete. The soils have a high risk for corrosion of uncoated steel. The Rositas-Orita-Carrizo-Aco map unit is characterized by soils with high sand percentages and moderate susceptibility to wind erosion. Most of the soil types are classified as somewhat limited with respect to suitability for septic systems (USDA 1969).

The Applicant's investigations for Federal jurisdictional waters and wetlands included an assessment of the presence of hydric soils. The investigation found that soil indicators were not found that meet the criteria for hydric soils, as defined by the USACE regulatory guidance, including the 2008 Arid West Supplement (Huffman-Broadway Group 2015).

Figure 3.7-3 shows the Hydrologic Soil Groups present in the Project area. Hydrologic soil grouping is a measure of the infiltration rate of the onsite soils. Soils with a high infiltration rate (Group A) would be expected to have low runoff rates, and therefore would not be prone to erosion by surface water runoff. Soils with a low infiltration rate (Group C) would be expected to have higher runoff rates, and may be prone to erosion by surface water runoff.

Figure 3.7-4 shows the Wind Erodibility Groups present in the Project area, in tons per acre per year. The areas of highest potential wind erodibility (160 to 310 tons per acre per year) correspond to the sand dune areas in the northern and western parts of the Project area. The bulk of the Project area is classified as having moderate wind erodibility potential.

Evaluation of the potential risk of exposure to valley fever, through inhalation of site soils, is presented in Sections 3.9 and 4.9.

Groundwater Conditions

A detailed description of groundwater conditions in the Project area is provided in Section 3.20. Based on the elevation difference between the site and the adjacent Colorado River floodplain, and the depth to groundwater found at adjacent sites, the depth to groundwater at the site is expected to be more than 100 feet.

3.7.1.3 Geologic Hazards

Geologic and seismic hazards are site characteristics which could affect the stability or integrity of Project-related structures, or could result in offsite impacts to adjacent properties. These hazards include potential instability due to seismic activity, unstable soils, corrosive soils, or flooding and erosion.

Faulting and Seismicity

Hazards which can be potentially associated with active seismic activity could include surface fault rupture, ground shaking, liquefaction, settlement, and landslides. The Project site is located in a seismically active region of Southern California. The San Andreas Fault is the boundary between the North American and Pacific crustal plates, with the North American Plate moving southeastward relative to the Pacific plate at a rate of about 40 to 50 millimeters per year. Most of this movement occurs on the San Andreas Fault, while a smaller amount of movement occurs on shorter active faults in the region. Seismic hazards can occur from both the San Andreas Fault, and from the smaller faults.

The California Geological Survey (CGS) defines an active fault as one that has had surface displacement during the Holocene age (roughly the last 11,000 years). Potentially active faults are those that show evidence of surface displacement during the Quaternary age (roughly the last 1.6 million years) but for which evidence of Holocene movement has not been established. An inactive fault is one that has not shown evidence of surface displacement during the Quaternary age.

The Project site has not been mapped by the State of California for the purpose of defining Seismic Hazard Zones. There are no known active, sufficiently active, or well-defined fault traces identified on the Project site, and the site has not been delineate by the CGS as being within an Earthquake Fault Zone. Mapping by Jennings (CGS 1994) shows a Tertiary age fault to the southwest of the site, but more recent mapping by the USGS identifies this feature as Quaternary terraces of varying ages, rather than terraces offset by faulting (USGS 2006)

The closest active faults to the Project are the Brawley Seismic Zone, Elmore Ranch, and the San Andreas Fault. All of these active faults are located 58 miles or more west of the Project site (CGS 2010). The closest potentially active fault (defined as a Quaternary-age fault that lacks evidence of Holocene-age displacement) is located approximately 20 miles north of the Project site (CGS 2010).

Surface Fault Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude and nature of fault rupture can vary

for different faults, or even along different strands of the same fault. Ground rupture is considered most likely along active faults.

As discussed above, there are no active or potentially active faults mapped within the Project site (CGS 2010). The closest active faults are more than 58 miles away. Therefore, the potential for surface fault rupture within the Project site is low.

Ground Shaking

Generally, the greater the earthquake magnitude and the closer the fault rupture to a site, the greater the intensity of ground shaking. The amplitude and frequency of ground shaking are related to the size of an earthquake, the distance from the causative fault, the type of fault, and the response of the geologic materials at the site. Ground shaking can be described in terms of acceleration, velocity, and displacement of the ground.

A common measure of ground motion during an earthquake is the peak ground acceleration (PGA). The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. Unlike measures of magnitude, which provide a single measure of earthquake energy, PGA varies from place to place, and is dependent on the distance from the epicenter and the character of the underlying geology (e.g. hard bedrock, soft sediments, or artificial fills).

The Modified Mercalli (MM) Intensity Scale assigns an intensity value based on the observed effects of ground-shaking produced by an earthquake. Unlike measures of earthquake magnitude, the MM intensity scale is qualitative in nature (i.e. it is based on actual observed effects rather than measured values). MM intensity values for an earthquake at any one place can vary depending on its magnitude, the distance from its epicenter, and the type of geologic material. The MM values for intensity range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from IV to X could cause moderate to significant structural damage. Because the MM Intensity Scale is a measure of ground-shaking effects, intensity values can be related to a range of PGA values.

As discussed above, the Project site is located over 58 miles from the closest active faults in the region. Relative to the more seismically active areas to the west and northwest, the Project site will experience lower levels of shaking less frequently (CGS 2008). The estimated site intensity is a Modified Mercalli Intensity (MMI) value of V, which corresponds to a moderate shaking severity. Such an earthquake would be strong enough to be felt by nearly everyone, and would likely break windows and overturn unstable objects. The peak ground acceleration which has a 10 percent Probability of Exceedance in 50 years is approximately 0.0373g (URS 2011).

Liquefaction

Liquefaction is the significant and sudden reduction in stiffness and sheer strength of saturated sandy soils caused by a sudden increase in pore water pressure caused by an earthquake. The susceptibility of a site to liquefaction is related not only to the potential for ground shaking, but the water content, depth, and density of granular sediments. Liquefaction can intensify ground shaking, and therefore increase the amount of damage that could occur due to a seismic event.

Because of the depth to groundwater of approximately 100 feet, the Project site is unlikely to have saturated soils which could be susceptible to liquefaction.

Settlement

Settlement of soils can occur if site soils are composed of unconsolidated sediments and/or artificial fill. Settlement can be intensified during ground shaking seismic events. The geotechnical study of the site did not identify any potential for artificial fill materials at the Project site. However, the site is underlain by alluvial fan deposits of relatively unconsolidated, medium-dense materials. These may be unstable to support structures in the vicinity of the operations and maintenance facility and the On-Site Substation, and could be susceptible to settlement.

Landslides

The potential for landslides, slope instability, or debris flows at the Project site is insignificant, due to the relatively flat terrain.

Subsidence

Subsidence of the land surface can be caused by seismic events, withdrawal of subsurface fluids, collapse of underground cavities, or consolidation or hydrocompaction of unconsolidated sediments. Consolidation can occur naturally, or can be increased by the placement of foundation or fill loads above unconsolidated sediments.

No subsidence has been reported in the Project area (USGS 2002; DWR 1978). There is no petroleum or natural gas withdrawal which could result in subsidence. The EIS prepared for the Blythe Solar Power Project (BSPP) concluded that no regional subsidence due to the historic groundwater withdrawal has been reported in the vicinity (BLM 2010). This includes localized or regional subsidence during the 1980's and 1990's, when regional groundwater extraction was at its historic maximum of approximately 48,000 AFY in the general area (BLM 2010).

Collapsible soils can undergo subsidence when exposed to water in a process called hydrocompaction. This can occur in areas associated with alluvial fans, windblown materials, or colluvium. Because the Project site is associated with alluvial fans, the potential for hydrocompaction of collapsible soils could exist.

Expansive Soils

Expansive soils can expand or contract in response to moisture content, resulting in movements that can damage and/or distress to structures and equipment with shallow foundations. Based on the NRCS maps and descriptions, the soils on the Project site are not expected to have expansive characteristics (USDA 1969). This would be confirmed through additional geotechnical investigation prior to construction.

Corrosive Soils

Corrosivity refers to potential soil-induced electrochemical or chemical action that could corrode or deteriorate concrete, reinforcing steel in concrete structures, and bare-metal structures exposed to these soils. All soil types mapped on the site have a low potential for corrosion of concrete. However, the soils have a high risk for corrosion of uncoated steel (USDA 1969). This would be confirmed through additional geotechnical investigation prior to construction.

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3.8 Greenhouse Gas Emissions and Global Climate Change

This section describes the environmental setting and regulatory framework with regard to greenhouse gas (GHG) emissions for the proposed Project and alternatives. Emissions and impacts associated with criteria air pollutants were addressed in Section 3.2.

3.8.1 Environmental Setting

3.8.1.1 Characteristics and Definition

Global climate change refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), which are known as GHGs. These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. Gases that trap heat in the atmosphere are often called greenhouse gases, analogous to a greenhouse, and are emitted by both natural processes and human activities. GHGs in the atmosphere influence regulation of the Earth's temperature. Emissions from human activities, such as burning fossil fuels for electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere.

Scientific evidence indicates a trend of increasing global temperature over the past century, which a number of scientists attribute to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

Recent observed changes due to global warming include shrinking glaciers, thawing permafrost, a lengthened growing season, and shifts in plant and animal ranges (IPCC 2007). Generally accepted predictions of long-term environmental impacts due to global warming include sea level rise, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems, including the potential loss of species, and a significant reduction in winter snowpack.

Global climate change refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. Global climate change may result from natural factors, natural processes, and/or human activities that change the composition of the atmosphere and alter the surface and features of land.

The United Nations Intergovernmental Panel on Climate Change (IPCC) developed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC concluded that a stabilization of GHGs at 400 to 450 ppm CO_2 equivalent concentration is required to keep global mean warming below 3.6°F (2° Celsius [2°C]), which is assumed to be necessary to avoid dangerous climate change (AEP 2007).

The State of California has been at the forefront of developing solutions to address global climate change. State law defines greenhouse gases as any of the following compounds: CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505(g)). CO_2, CH_4, and N_2O are the most common GHGs that result from human activity.

In addition, the State of California manages emission of "short-lived climate pollutants." Among these pollutants are methane, fluorinated gases including hydrofluorocarbons (HFCs), and black carbon. As of January 1, 2018, ARB is implementing a Shor-lived Climate Pollutant Strategy, with the aim of setting statewide 2030 emission reduction targets for methane, HFCs, and anthropogenic black carbon. The initial emphasis of the Strategy is to address methane emissions from dairies, other livestock operations, and landfills. Solar energy installations are not a focus of the Strategy.

3.8.1.2 Greenhouse Gases

Greenhouse Gases

Gases that trap heat in the atmosphere are often referred to as Greenhouse Gases (GHGs), which are emitted into the atmosphere through natural processes and human activities. GHGs are so named because of their ability to prevent heat from the surface of the earth from escaping into space. Many GHGs have lifetimes of decades or even centuries in the atmosphere; so the problem cannot be eliminated quickly. Thus, the problems we are experiencing today do not accurately represent the full effects we may see years from now based on current levels of GHGs (CARB 2009).

The principal GHGs contributing to climate-change and resulting from human activity are carbon dioxide (CO_2), methane (CH_4), and fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement).

When quantifying GHG emissions, the different global warming potentials of GHG pollutants are usually taken into account by normalizing their rates to an equivalent CO_2 emission rate. Global warming potential is a relative measure of a compound's residence time in the atmosphere and ability to warm the planet. For example, SF_6, while representing a small fraction of the total GHGs emitted annually worldwide, is a very potent GHG with 23,900 times the global warming potential of CO_2. Therefore, an emission of one metric ton of SF_6 would be reported as an emission of 23,900 metric tons CO_2e. Large emission sources are reported in million metric tons of CO_2e. A metric ton is 1,000 kilograms; it is equal to approximately 1.1 U.S. tons and approximately 2,204.6 pounds.

Other greenhouse gases include water vapor, ozone, and aerosols. Water vapor is an important component of our climate system and is not regulated. Ozone and aerosols are short-lived greenhouse gases; global warming potentials for short-lived greenhouse gases are not defined by the IPCC. Aerosols can remain suspended in the atmosphere for about a week and can warm the atmosphere by absorbing heat and cool the atmosphere by reflecting light. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, as opposed to other greenhouse gases that can remain in the atmosphere for years.

GHG emissions from the electricity sector are dominated by CO_2 emissions from carbon-based fuels. Other sources of GHG emissions are small and also are more likely to be easily controlled or reused or recycled, but are nevertheless documented here as some of the compounds that have very high global warming potentials. These air pollutants are considered to be GHGs because

their presence in the atmosphere results in increased solar absorbance, and/or prevents heat from the surface of the Earth from escaping to space. The principal GHGs resulting from human activity that enter and accumulate in the atmosphere are described below.

Carbon Dioxide (CO_2)

CO_2 is a naturally occurring gas that enters the atmosphere through natural as well as anthropogenic sources. Key anthropogenic sources include: the burning of fossil fuels (e.g., oil, natural gas, coal, etc.); solid waste; trees, wood products, and other biomass; and industrially relevant chemical reactions such as those associated with manufacturing cement. CO_2 is removed from the atmosphere when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH_4)

Like CO_2, CH_4 is emitted from both natural and anthropogenic sources. Key anthropogenic sources of CH_4 include gaseous emissions from landfills, releases associated with mining and materials extraction industries, in particular coal mining, and fugitive releases associated with the extraction and transport of natural gas and crude oil. CH_4 emissions also result from livestock and agricultural practices. Small quantities of CH_4 are released during fossil fuel combustion.

Nitrous Oxide (N_2O)

N_2O is also emitted from both natural and anthropogenic sources. Important anthropogenic source activities include industrial activities, agricultural activities (primarily application of nitrogen fertilizer), the use of explosives, combustion of fossil fuels, and decay of solid waste.

Fluorinated Gases

HFCs, PFCs, and SF_6 are synthetic gases that are emitted from a variety of industrial processes and contribute substantially more to the greenhouse effect than the GHGs described previously. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in small quantities, but because they are potent GHGs, they are sometimes referred to as high global warming potential gases.

GHG Inventory Methodology

Total GHG emissions from a source are often reported as a CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emission of each GHG by its global warming potential and adding the results together to produce a single, combined emission rate representing all GHGs. GHG emissions are typically quantified in metric tons (MT) or millions of metric tons (MMT).

GHGs have varying global warming potential. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas" (EPA 2016a). The global warming potential rating system is standardized to CO_2, which has a value of one. For example, CH_4 has a global warming potential of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis. Table 3.8-1 presents the global warming potential and atmospheric lifetimes of common GHGs.

Table 3.8-1. Global Warming Potentials and Atmospheric Lifetimes of GHGs

GHG	Formula	100-Year Global Warming Potential	Atmospheric Lifetime (Years)
Carbon Dioxide	CO_2	1	Variable
Methane	CH_4	28-36	12 ± 3
Nitrous Oxide	N_2O	265-298	120
Sulfur Hexafluoride	SF_6	23,900	3,200

Source: EPA 2016a.

Human-caused sources of CO_2 include combustion of fossil fuels (coal, oil, natural gas, gasoline, and wood). Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. Concentrations of CO_2 have increased in the atmosphere since the industrial revolution.

CH_4 is the main component of natural gas and also arises naturally from the anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure, and cattle farming. Human-caused sources of N_2O include combustion of fossil fuels and industrial processes such as the production of nylon or nitric acid.

Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

National GHG Emissions

Anthropogenic GHG emissions in the United States derive mostly from the combustion of fossil fuels for transportation and power production. Energy-related CO_2 emissions, resulting from fossil fuel exploration and use, account for approximately three-quarters of the human-generated GHG emissions in the United States, primarily in the form of CO_2 emissions from burning fossil fuels. Approximately 31 percent of US GHG emissions come from electricity production; 27 percent derive from transportation; while industrial processes, agriculture, forestry, other land uses, and waste management compose a majority of the remaining of sources (EPA 2016b). Approximately one-third of GHG emissions come from motor vehicle transportation, including motorized vehicles using the transportation network on public lands (EPA 2016b).

According to the Environmental Protection Agency's inventory of GHG emissions from 1990 to 2013 (EPA 2018), U.S. greenhouse gas emissions in 2016 were measured as 6,611 million metric tons of carbon dioxide equivalent. This is a 2.4 percent increase in GHG emissions from 1990 to 2016, but an 11.4 percent decrease from the peak of 7,351 million metric tons in 2007. In terms of the overall trend from 1990 to 2016, total transportation CO_2 emissions rose by 21.4 percent due, in large part, to increased demand for travel as fleet wide light-duty vehicle fuel economy was relatively stable. The number of vehicle miles traveled by light-duty motor vehicles (passenger cars and light-duty trucks) increased 44 percent from 1990 to 2016, as a result of a confluence of factors including population growth, economic growth, urban sprawl, and low fuel prices during the beginning of this period. Some of the recent emissions increases are attributed to increased energy consumption due to colder winter conditions in some parts of the country.

Anthropogenic emissions of volatile organic compounds (VOCs) include fuel production, distribution, and combustion, with the largest source being emissions from motor vehicles due to either evaporation or incomplete combustion of fuel, and from biomass burning. Thousands of

different compounds with varying lifetimes and chemical behavior have been observed in the atmosphere, so most models of tropospheric chemistry include some chemical speciation of VOCs. Generally, fossil VOC sources have already been accounted for as release of fossil carbon in the CO_2 budgets and thus VOCs are not included as a component of GHG emission calculations.

State GHG Emissions

The State of California GHG Inventory performed by the CARB compiled statewide anthropogenic GHG emissions and sinks. It includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs. The current inventory covers the years 2000 to 2013, and is summarized in Table 3.8-2. Data sources used to calculate this GHG inventory include California and Federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the IPCC. The 2000 emissions level is the sum total of sources and sinks from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories in the inventory. These sectors include electricity generation (both generated in-state and imported from out of state), transportation, industrial, commercial, residential, agriculture, and not specified (solvents and chemicals).

Table 3.8-2. State of California GHG Emissions by Sector, 2000-2013

Sector	Total 2000 Emissions (MMT CO_2e)	Percent of Total 2000 Emissions	Total 2013 Emissions (MMT CO_2e)	Percent of Total 2013 Emissions
Electricity Generation (in state)	59.19	12.7	50.58	11.0
Electricity Generation (imported)	45.99	9.8	40.05	8.7
Transportation	178.12	38.0	172.53	37.6
Industrial	105.40	22.5	104.16	22.7
Commercial	14.95	3.2	22.63	4.9
Residential	31.82	6.8	32.32	7.0
Agriculture	32.1	6.8	36.21	7.9
Solvents and Chemicals	1.2	0.3	0.79	0.2
Total California Emissions	468.8	NA	459.3	NA

Source: CARB 2015

In 2013, California's GHG emissions were calculated as 459.3 million metric tons of carbon dioxide equivalent; incorporating broad GHG-producing sectors throughout the state. The CARB 2015 Greenhouse Gas Emission Inventory: 2000 – 2013 shows that California's gross emissions of greenhouse gases decreased by 2.0 percent from 468.8 million metric tons of CO_2e in 2000 to 459.3 million in 2012, with a maximum of 495.3 million tons in 2004. During the same period, California's population grew by 11 percent from 34 to 37.8 million people. As a result, California's per capita GHG emissions have generally decreased from 13.7 in 2000 to 12.2 tons of CO_2e per person in 2013.2

In 2015, the transportation sector remained as California's largest source of GHG emissions, accounting for 37.6 percent of GHG emission inventory. Contributions from the transportation sector include emissions from on-road and off-road vehicles, aviation, rail and water-borne vehicles, and some other minor sources. Transportation-related GHG emissions have dropped 10 percent since reaching a maximum of 191.94 million tons in 2007. Emissions from on-road sources, which consist of light-duty vehicles (cars, motorcycles, and light-duty trucks), heavy-

duty trucks, and buses, accounted for over 92 percent of transportation sector GHG emissions in 2013. Of the on-road vehicles, light duty vehicles accounted for approximately 69 percent of emissions in 2013. On-road emissions declined each year since 2006, until they increased by 0.8 percent in 2013. Total transportation sector emissions also decreased each year since 2007, until they increased from 2012 to 2013.

In California, renewable electricity sources have been given preference over fossil fuel fired electricity sources. This means that when renewable energy is available on the grid, the California Independent Systems Operator (CAISO) requests turndown of fossil power production. When the renewable facility goes off-line, if there is still demand, the CAISO requests turn-up of fossil power production. Some fossil fuel load-following plants will adjust automatically as renewable sources come on- and off-line. As a result of these operating scenarios, new renewable energy power plants operating in California offset the production of electricity from fossil fuel fired power plants.

Local GHG Emissions

Several regional and local governments and air districts have developed climate and or GHG reduction plans and initiatives, like that of Riverside County, which provide a step-down from state regulations. In addition, local air quality districts have adopted various levels of significance for carbon dioxide emissions and county and city governments are developing climate change and greenhouse gas emissions guidance and strategies. For example, the MDAQMD has adopted a significance threshold of 100,000 tons per year of CO_2e for the district, which is equivalent to 90,718.47 metric tons of CO_2e (MT CO_2e). The MDAQMD has adopted greenhouse gas emissions thresholds in its CEQA Guidelines, but has not adopted a comprehensive strategy for reducing greenhouse gas emissions.

The DRECP analyzed the direct greenhouse gas emissions of renewable energy projects within the planning area. The project-specific estimates used excluded external or life-cycle emissions, such as those from raw materials and manufacturing. The combined construction emissions of the existing projects were amortized over the life of each project, and were added to the operational and maintenance emissions. The analysis calculated a GHG emission rate ranging from about 1 to 39 MT CO_2e per year for each megawatt of built capacity, with an average of less than 10 MT CO_2e per year. Based on those estimates, the construction, operation and maintenance, and decommissioning activities for the 50 existing renewable energy projects in the DRECP area, with a combined generation capacity of 6,250 MW, may emit about 62,500 MT CO_2e per year. The development of renewable energy sources in the DRECP is expected to offset some of the use and or dependency for fossil fuel energy, thereby reducing greenhouse emissions through mitigation.

Existing Greenhouse Gas Emissions at the Project Site

No industrial, residential, or other emitters of GHGs are currently located or operating at the Project site. No other existing on-site operations result in the combustion of fossil fuel, or otherwise result in direct anthropogenic emissions of GHGs on-site. There is, however, existing vegetation located on-site, and this vegetation is expected to provide ongoing natural carbon uptake. Wohlfahrt et al. (2008) completed an evaluation of carbon uptake by natural vegetation in Mojave Desert systems. The study indicates that desert plant communities may result in the uptake of carbon in amounts as high as 102 to 110 grams per square meter per year; however, the

study showed a high degree of uncertainty around these amounts. This analysis assumes that on-site vegetation could uptake as much as 100 grams per square meter per year as a conservative estimate. Under existing conditions, this would equate to a natural carbon uptake, expressed in CO_2, of approximately 1.48 metric tons (MT) of CO_2 per acre per year.

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3.9 Hazards and Hazardous Materials

This section describes the environmental setting and regulatory framework in regards to hazards and hazardous materials for the proposed Project and alternatives. The affected environment for hazards and hazardous materials includes evaluation of potential accidents and spills, potential site contamination, public health, transmission line safety and nuisance, emergency response capability, aircraft operations, intentionally destructive acts, and abandoned mine lands.

3.9.1 Environmental Setting

3.9.1.1 Hazardous Materials

The hazardous materials associated with Project construction and operation are discussed in Section 2.3.4.9 and 2.3.5, respectively. Procedures to be used for management and disposal of sanitary wastes are discussed in Section 2.3.3.9. Procedures to be used for management and disposal of other wastes are discussed in Section 2.3.7.1. The potential for releases of hazardous materials, and the risks associated with potential releases, are discussed in Section 4.9.3. This section discusses the current conditions on the Project area that are relevant to potential hazardous materials impacts, including the proximity of the Project area to potential receptors, as well as known information regarding current hazardous conditions.

Environmental Site Assessment

Environmental Data Resources, Inc. (EDR) prepared the EDR DataMap™ Area Study, which contains a summary of environmentally affected sites and other sites that are within a one-mile radius surrounding the Project area. The EDR report (included as an appendix to URS 2015) includes descriptions of each agency database, site names and addresses, and status, with some repetition existing among the different databases. There were no hazardous sites identified within the Project site, nor within the one-mile search radius of the Project site.

Existing Environmental Site Contamination

The Phase I Environmental Site Assessment conducted for the Project site in 2015 found two Recognized Environmental Conditions (RECs) per the ASTM definition (URS 2015, provided in Appendix Q). The two RECs were both suspected groundwater supply wells, which were observed to be open and unsecured. There was no evidence of any releases of hazardous substances or petroleum products on the BLM portion of the Project site or in the immediate vicinity based on records searches and visual surveys. De minimis conditions identified on the BLM land during the site reconnaissance included trash and debris. Hazardous substances, in the form of partially-filled oil and lubricant containers and other trash and debris, were observed on the private land parcel. There have been no subsequent response actions, including securing of the groundwater wells or sampling of environmental media, to verify whether site contamination currently exists.

Unexploded Ordnance

The Project site is located within General Patton's World War II Desert Training Center opened by the Army Ground Forces in 1942. In 1943 it was renamed California-Arizona Maneuver Area (CAMA). The CAMA was the largest military training center ever established, stretching from west of Pomona, California, to Yuma, Arizona, and north to Nevada, encompassing approximately 12 million acres. Seven camps were set up in the CAMA for divisional use and for combat and supply units. The camps were widely spaced to prevent groups from interfering with each other during training exercises, but all were interconnected with a network of railroad lines and roads. After the camps closed in 1944, efforts began to salvage material and dismantle the sites. The land was returned to private and government holdings.

The former Blythe Army Airfield is located approximately 1.5 north of the Project site. The airfield opened as Bishop Army Airfield in 1940. The airport later became a part of Muroc Army Air Field, now known as Edwards Air Force Base. The airfield was a second Army Air Forces heavy bombardment crew training base during World War II. Multiple bombardment groups were active at the airfield in 1942 and 1943, and up to 75 B-17 bombers were flown and maintained at this site. Historical records and drawings indicate that bombs and explosive materials, and possibly incendiary and pyrotechnic materials, were stored on airfield grounds in up to five magazines or bunkers. A gunnery range, skeet range, and jeep type target range, all with ammunition storage, were constructed and used by Army personnel (California State Military Museum 2008).

During the Phase I Environmental Site Assessment, no indication was found suggesting these materials were presented on the Project area. However, because of the former use of public lands in the area for military training, there is potential for discarded military munitions, other explosives, and unexploded ordnance (collectively, UXO) to be encountered on the surface, or in subsurface excavations. The BLM has conducted investigations at several of the known camps, but has not completed a UXO survey of the entire training ground. UXO discoveries have been reported during cultural resource studies in the area, and as part of construction efforts at the Modified BSPP site north of I-10.

Pesticide Use

Pesticides are used to control living organisms that cause damage or economic loss, or that transmit or cause disease. Pests include insects, fungi, weeds, rodents, nematodes, algae, viruses, and bacteria. Pesticides include herbicides, fungicides, insecticides, rodenticides, and disinfectants, as well as insect growth regulators. In California, adjuvants (substances added to enhance the efficacy of a pesticide) also are subject to the regulations that control pesticides. Based on historical information and existing conditions identified in the Phase I Environmental Site Assessment (URS 2015), the portion of the Project site on BLM land has not been used for agriculture and therefore would not have been subject to pesticide applications.

Based on the historical agricultural use of the private land parcel, there is the potential for residual pesticides to be present in surface and subsurface soils on that part of the Project area.

Sensitive Receptors

The hazards associated with the Project are considered within the context of the proximity of residential and other sensitive receptors, including schools, daycare centers, emergency response facilities, and long-term care facilities. The closest resident is located approximately 0.7 miles north of the Project. Two other residences are located approximately one mile north of the Project, on the southwest corner of the Nichols Warm Springs/Mesa Verde community, which is a community of approximately 300 single family homes and mobile homes. The remainder of the residences in Nichols Warm Springs/Mesa Verde, including the Mesa Verde Park and Roy Wilson Community and Child Center, are located just outside of the 1-mile boundary. No schools, hospitals, or long-term care facilities are located within one mile of the proposed Project (URS 2015).

3.9.1.2 Public Health

Location of Exposed Populations and Sensitive Receptors

The general population includes sensitive subgroups that could be at greater risk from exposure to hazardous materials or emitted pollutants. These sensitive subgroups include the very young, the elderly, and those with existing illnesses. In addition, the location of the population in the area surrounding a project site may have a major bearing on health risk. The closest resident is located approximately 0.7 miles north of the Project. Two other residences are located approximately one mile north of the Project, on the southwest corner of the Nichols Warm Springs/Mesa Verde community, which is a community of approximately 300 single family homes and mobile homes. The remainder of the residences in Nichols Warm Springs/Mesa Verde, including the Mesa Verde Park and Roy Wilson Community and Child Center, are located just outside of the 1-mile boundary. No schools, hospitals, or long-term care facilities are located within one mile of the proposed Project (URS 2015).

Existing Public Health Concerns

Analyses of existing public health issues typically are prepared in order to identify the current status of respiratory diseases (including asthma), cancer, and general health in the population located near proposed action sites to provide a basis on which to evaluate any additional health impacts from the proposed action. No data regarding existing health concerns specific to the local area has been identified.

Vector-Borne Diseases

Mosquitoes and other arthropods are known to be carriers of many serious diseases. Arthropod-borne viruses ("arboviruses") are viruses that are transmitted by blood-feeding arthropods, such as mosquitoes and ticks, when they bite susceptible humans and animals. There are four main virus agents of encephalitis in the United States: eastern equine encephalitis, western equine encephalitis, St. Louis encephalitis, and La Cross encephalitis, all of which are transmitted by mosquitoes. Most human infections are asymptomatic or result in nonspecific flu-like symptoms such as fever, headache, nausea, and tiredness. However, infection may lead to encephalitis, an inflammation of the brain, with a fatal outcome or permanent neurologic damage in a small

proportion of infected persons. West Nile Virus (WNV) is closely related to the SLE virus and causes similar symptoms.

Of these diseases, only the WNV was reported in California in 2015. One hundred and twenty five cases of WNV were reported in Riverside County and 729 cases were reported in the state during 2015 (USGS 2015).

Valley Fever

Coccidioidomycosis, commonly known as valley fever, is primarily a disease of the lungs that is common in the southwestern U.S. and northwestern Mexico. Valley fever is caused by the fungus *Coccidioides*, which grows in soils in areas of low rainfall, high summer temperatures, and moderate winter temperatures. These fungal spores become airborne when the soil is disturbed by winds, construction, farming, and other activities. In susceptible people and animals, infection occurs when a spore is inhaled. Valley fever symptoms generally occur within 3 weeks of exposure. Valley fever is not a contagious disease, that is, people do not contract the disease from each other, and secondary infections are rare.

Riverside County has an average annual incidence rate for valley fever of 2.2 to 3.9 cases per 100,000 people for the years 2007 to 2011 (MacLean 2014), which is relatively low compared to the highest incidence rate for California in Kern County, with an average annual incidence rate of 205.1 cases per 100,000 people for the years 2009 to 2012 (CDPH 2016). The Blythe area was identified as being endemic for valley fever as early as the 1940s (Maclean 2014).

People working in certain occupations such as construction, agriculture, and archaeology have an increased risk of exposure and disease because these jobs result in the disturbance of soils where fungal spores are found. Valley fever infection is highest in California from June to November. In addition, many domestic and native animals are susceptible to the disease, including dogs, horses, cattle, coyotes, rodents, bats, sea otters, lizards, and snakes. Most valley fever cases are very mild. It is estimated that 60 percent or more of infected people either have no symptoms or experience flu-like symptoms and never seek medical attention. The disease has 1.3% mortality rate in California (CDPH 2016).

3.9.1.3 Transmission Line Safety and Nuisance

The potential receptors for hazards associated with transmission line safety and nuisance would be the same as those associated with hazardous materials. The closest resident is located approximately 0.7 miles north of the Project. Two other residences are located approximately one mile north of the Project, on the southwest corner of the Nichols Warm Springs/Mesa Verde community, which is a community of approximately 300 single family homes and mobile homes. The remainder of the residences in Nichols Warm Springs/Mesa Verde, including the Mesa Verde Park and Roy Wilson Community and Child Center, are located just outside of the 1-mile boundary. No schools, hospitals, or long-term care facilities are located within one mile of the proposed Project (URS 2015).

3.9.1.4 Emergency Response

The Office of Emergency Services maintains two fully functional emergency operations centers in the cities of Riverside and Indio for coordination of response and recovery to extraordinary

emergencies and disasters affecting Riverside County. The Riverside County Operational Area Emergency Operations Plan (RCFD 2006) addresses the planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies in or affecting Riverside County and establishes the framework for coordinating various Riverside County departments and other agencies in their emergency response activities.

The 2010 California Fire Code and 2010 CBC regulate and govern the safeguard of life and property from fire and explosion hazards arising from the storage, handling, and use of hazardous substances, materials, and devices and from conditions hazardous to life or property in the occupancy of buildings and premises. Accordingly, emergency services access roads must be installed and made serviceable prior to and during the time of construction. The grade of the fire department access road must be within the limits established by the Fire Chief and may not exceed 15 percent.

3.9.1.5 Airport Operations

The Blythe Airport is located approximately 1.5 miles northeast of the proposed solar facility site. The airport is a public facility, owned by Riverside County. The 3,094-acre facility is the largest airport serving eastern Riverside County and serves primarily general aviation demand in the Blythe area. The Airport is classified in the National Plan of Integrated Airport Systems as a general aviation transport airport, designed to accommodate business jets, cargo-type aircraft, light private planes, and flight school training activities. The Blythe Airport currently has two runways (8/26 and 17/35). The primary runway is Runway 8/26, which is oriented generally east-west. Aircraft operations average 69 flights per day (AirNav 2016). The airport is often used as a base for crop spraying operations, flight rental, and flight instruction.

The Project would be partially located within the area covered by the Riverside County Airport Land Use Compatibility Plan (RCALUCP), which was adopted by the Riverside County ALUC and replaced the compatibility plans for individual airports. The RCALUCP identifies Airport Influence Areas (AIAs) to protect the public from the adverse effects of aircraft noise, ensure that facilities and people are not concentrated in areas susceptible to aircraft accidents, and ensure that no structures or activities adversely affect or encroach upon the use of navigable airspace (ALUC 2004).

The Project would be partially located within the Blythe AIA. According to the RCALUCP, electrical facilities (such as power plants, electrical substations, and transmission lines) located in airport land use compatibility zones must meet the restrictions designated for each zone so that they are generally compatible or potentially compatible. This is to ensure that electrical facilities do not create obstructions to the navigable air space and safe operations at the airport. Land uses that create hazards to air navigation are prohibited in all Airport Land Use Compatibility Zones. Such hazards include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land uses that may increase the attraction of birds to the area are also prohibited. Potential hazards to aviation from solar energy projects located in sufficient proximity to airports include potential electromagnetic interference from the power plant and transmission lines, potential glare from the PV panels used to collect solar energy, and bird attraction from ponds.

The airport land use compatibility zones within the Project area are illustrated in Figure 3.9-1. As shown in Figure 3.9-1, a portion of the Project area would fall within airport Compatibility Zone E (ALUC 2012). The compatibility criteria of projects with Compatibility Zone E are shown in Table 3.9-1. In Zone E, airspace review is required for structures greater than 100 feet in height, but there are no other specific land use restrictions. The provisions of Part 77 of the FAA Regulations govern whether a proposed project requires the submittal of Form 7460-1 to the FAA for preparation of an aeronautical study. Portions of a transmission line that are not in an AIA still could potentially be subject to FAA review through the Form 7460-1 process if within 20,000 feet (3.8 miles) of a runway, especially if located at a higher elevation than the runway.

Yuma Proving Ground is located approximately 47 miles from the Project site, and is the site of military air navigation activities. Appendix E of the DRECP (BLM 2016) states that "photovoltaic systems on or near SUAs [Special Use Airspace] or MTRs [Military Training Routes] present little to no conflict to military operations, testing, or training."

Table 3.9-1. Basic Compatibility Criteria with Compatibility Zone E

Zone	Locations	Maximum Densities/Intensities (People per Acre)		Required Open Land	Prohibited Uses	Other Development Conditions
		Average	Single Acre			
E	Other Airport Environs	No Limit	No Limit	No Requirement	Hazards to flight	• Airspace review required for objects >100 feet tall • Major spectator-oriented sports stadiums, amphitheaters, concert halls discouraged beneath principal flight tracks

Source: Riverside County Airport Land Use Compatibility Plan Policy Document Table 2A, October 2004.
Notes:
1 - Usage intensity calculations shall include all people (e.g., employees, customers/visitors) who may be on the property at a single point in time, whether indoors or outside.
2 - The total number of people permitted on a project site at any time, except rare special events, must not exceed the indicated usage intensity times the gross acreage of the site. Rare special events are ones (such as an air show at the airport) for which a facility is not designed and normally not used and for which extra safety precautions can be taken as appropriate.
3 - Clustering of nonresidential development is permitted. However, no single acre of a project site shall exceed the indicated number of people per acre.
4 - Open land requirements are intended to be applied with respect to an entire zone. This is typically accomplished as part of a community general plan or a specific plan, but may also apply to large (10 acres or more) development projects.
5 - The uses listed here are ones that are explicitly prohibited regardless of whether they meet the intensity criteria. In addition to these explicitly prohibited uses, other uses will normally not be permitted in the respective compatibility zones because they do not meet the usage intensity criteria.
6 - As part of certain real estate transactions involving residential property within any compatibility zone (that is, anywhere within an airport influence area), information regarding airport proximity and the existence of aircraft overflights must be disclosed. This requirement is set by state law.

3.9.1.6 Intentionally Destructive Acts

The number and high profile of international and domestic terrorist attacks during the last decade presents a new and realistic threat to the safety and security of the people of the U.S., infrastructure, and resources. There is a potential for intentional destructive acts, such as sabotage or terrorism events, to cause impacts to human health and the environment. As opposed to industrial hazards, collisions, and natural events, where it is possible to estimate event

probabilities based on historical statistical data and information, it is not possible to accurately estimate the probability of an act of terrorism or sabotage; therefore, related analysis generally focuses on the consequences of such events. In general, the consequences of a sabotage or terrorist attack on a solar facility would be expected to be similar to accidental and natural events that could result in an interruption of power service, fire, or hazardous materials release.

The energy generation sector is one of 14 areas of Critical Infrastructure listed by the U.S. Department of Homeland Security. Nearly all of the other areas of Critical Infrastructure are reliant, at least in part, on the energy sector. The level of security needed for any particular facility depends on the threat imposed, the likelihood of an adversarial attack, the likelihood of success in causing a catastrophic event, and the severity of consequences of that event.

The Department of Homeland Security Interim Final Rule setting forth Chemical Facility Anti-Terrorism Standards (6 CFR Part 27) requires facilities that use or store certain hazardous materials to conduct vulnerability assessments and implement certain specified security measures. Although the proposed facility would not be covered by the standards, the BLM's position is that the Applicant should implement a minimum level of security consistent with the Standards. The DOE published a draft Vulnerability Assessment Methodology for Electric Power Infrastructure in 2002 (DOE 2002). Energy sector members also are leading a significant voluntary effort to increase planning and preparedness, including infrastructure protection and cyber security. The North American Electric Reliability Corporation (NERC) has established a Critical Infrastructure Protection Program to coordinate and improve physical and cybersecurity for the bulk power system of North America as it relates to reliability (NERC 2014).

3.9.1.7 Abandoned Mine Lands

The Applicant's Phase I Environmental Site Assessment did not identify any abandoned mine lands within one mile of the Project site.

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3.10 Lands, Realty, and Agricultural and Forestry Resources

This section describes the environmental setting and regulatory framework in regards to land use and planning for the Project and alternatives. The environmental setting described includes current land activities, land ownership, and land use designations in adopted land use plans and policies.

Land uses within the Project site are managed by the BLM and are governed by the CDCA Plan, which is based on the concepts in the FLPMA. Specifically, the purpose of the CDCA Plan is to "provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality." The principle of multiple use is defined in the FLPMA §103(c) as follows:

> *The term "multiple use" means the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.*

A portion of the Project is located within BLM Utility Corridor J, the Project borders Corridor K, and the entire Project site is located within the Riverside East Solar Energy Zone (SEZ). BLM-administered lands are not zoned, and may be encumbered by easements, rights-of-way (ROWs), mining claims, and permits. Information regarding BLM ROW authorizations and easements were obtained from the Land & Mineral Legacy Rehost 2000 System of automated records (LR2000; BLM 2016). Applicable Federal land use plans include the CDCA Plan (BLM 1980), as amended, and the Northern and Eastern Colorado Desert Coordinated Management Plan (BLM 2002). The CDCA Plan was amended by the Approved Resource Management Plan Amendments/Record of Decision for Solar Energy Development in Six Southwestern States (Western Solar Plan) (BLM and DOE 2012) to identify all SEZ lands within the CDCA as sites associated with power generation or transmission.

Applicable local land use plans for lands around the Project site include the General Plans and Zoning Ordinances/Codes for Riverside County and the Riverside County ALUCP. The Project area is located outside the City of Blythe's General Plan area. Portions of the Project area are located within Blythe Airport compatibility Zone E. Please see Section 3.9, *Hazards and Hazardous Materials*, for a discussion of compatibility with the ALUCP.

3.10.1 Environmental Setting

3.10.1.1 Regional Setting

The Project area is located on the Palo Verde Mesa, a portion of the Palo Verde Valley on the western edge of the Colorado River in the Colorado Desert. The topography on the Palo Verde Mesa is relatively flat and slopes toward the southeast. Elevations range from 260 to 400 feet above mean sea level (amsl). The Project area is near the Big Maria Mountains on the northeast, the McCoy Mountains on the northwest, the Mule Mountains on the southwest, and the Colorado River on the east. Development in the surrounding area consists of open space, rural residences, the Blythe Airport, the Blythe Generating Plant, electrical transmission lines, and commercial businesses. The Project area includes undeveloped open desert that is managed by the BLM (see Figure 1-1). The Project area would be located approximately nine miles west of the Colorado River and 37 miles east of Desert Center. The Project would be located south of I-10 and west of State Route 78.

3.10.1.2 General Characteristics

The Project would be located primarily on BLM-administered lands in eastern Riverside County (see Figure 3.10-1). The BLM portion of the site currently consists of vacant and undeveloped desert land. The private land parcel is the site of a former jojoba farm. Development in the surrounding area includes the City of Blythe to the northeast. The Project encompasses BLM-administered land within Sections 3-7, 9-15, and 22-24, Township 7 South, Range 21 East, San Bernardino Base and Meridian.

3.10.1.3 Land Ownership/Management

BLM Land Use Designations

CDCA Plan

The CDCA encompasses 25 million acres in southern California designated by Congress in 1976 through the FLPMA. The BLM manages about 10 million of those acres. Congress directed the BLM to prepare and implement a comprehensive long-range plan for the management, use, development, and protection of public lands within the CDCA. The CDCA Plan (BLM 1980, as amended) is based on the concepts of multiple-use, sustained yield, and maintenance of environmental quality. The CDCA Plan provides overall regional guidance for BLM-administered lands in the CDCA and establishes long-term goals for protection and use of the California desert.

The CDCA Plan developed a classification system that places BLM-administered public lands in the CDCA into one of four Multiple-Use Classes, based on the sensitivity of the resources and types of uses for each geographic area. The Project site is classified as MUC-M (Moderate Use) in the CDCA Plan. Multiple-Use Class M (Moderate Use) is based upon a controlled balance between higher-intensity use and protection of public lands. This class provides for a wide variety of present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Class M management is also designed to conserve desert resources and to mitigate damage to those resources that permitted uses may cause.

As discussed in Section 1.6.2 and Appendix E, the DRECP replaced Multiple Use Classes with a different system of land use and conservation classifications. However, because the DQSP is not subject to the land use planning decisions made under the DRECP, the requirements of Multiple-Use Class M still apply to the application.

Western Solar Plan

As discussed in Section 1.6, the Project area is located within the Riverside East Solar Energy Zone (SEZ). The Riverside East SEZ was designated through the Final Solar PEIS (also known as the Western Solar Plan) (BLM and DOE 2012). A SEZ is defined by the BLM as "an area well-suited for utility-scale production of solar energy within which the BLM will prioritize and facilitate utility-scale production of solar energy and associated transmission infrastructure development". The Western Solar Plan and ROD recognize the DQSP as a "pending" ROW application (Western Solar Plan §9.4.22.2, p. 9.4-133). Pending applications like the DQSP are not subject to the land use planning decisions in the Western Solar Plan ROD (Western Solar Plan ROD Section B.1.2) or to the CDCA Plan amendments made in that decision.

Desert Renewable Energy Conservation Plan

BLM issued the DRECP in September 2016. The DRECP amends the CDCA Plan, specifically with respect to natural resource conservation and renewable energy development. The DRECP establishes Ecological and Cultural Conservation and Recreation Designations, and Renewable Energy Activities, Policies, and Allocations. These land use designations replace the Multiple-Use Classes that were previously in effect under the CDCA Plan. In addition, the DRECP establishes Visual Resource Management (VRM) Classifications.

In the DRECP, the Project site is designated as a Development Focus Area (DFA), which is an area where activities associated with solar, wind, and geothermal energy are allowed, streamlined, and incentivized. The DRECP also designates the Project area as VRM Class IV.

Because the application is not subject to the land use planning decisions in the DRECP, the Project is evaluated within the context of the multiple-use class designations of the CDCA Plan. The Project site is classified as Multiple Use Class M (Moderate Use) in the CDCA Plan. The Moderate Use classification is based upon a controlled balance between higher intensity use and protection of public lands. This class provides for a wide variety of present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Class M management is also designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause.

Donated Lands

The BLM can be the recipient and trustee of land donated by individuals or groups. Often such lands are donated with the express interest of preserving the resources that characterize these lands. In so doing, a restrictive instrument such as a conservation easement or deed restriction is attached to the donation and land that would control its use, often in terms of prohibiting development or change to the landscape. There is no record of such a donation and accompanying restrictive instrument associated with the Project site.

Riverside County

The 160 acre privately-owned inholding within the Project site is under Riverside County jurisdiction, and land uses are governed by Riverside County plans and policies.

3.10.1.4 Existing Uses

On-Site Land Uses

The Project would be situated south of I-10, a major regional transportation corridor extending east-west through the area. The site is located generally west of Neighbors Boulevard, off of 16th Avenue/Seeley Boulevard. The Project site is located within unincorporated Riverside County, primarily on undeveloped BLM-managed lands. The proposed 450 MW PV electrical generating facility and 2.79-mile gen-tie line to the CRSS would occupy a total of 3,616 acres of BLM-managed lands and 154 acres of private land. The portion of the Project area located on BLM land is currently undeveloped. The 160-acre private parcel was previously the location of a jojoba farm.

The current BLM easements and rights-of-way on and adjacent to the Project site are listed in Table 3.10-1. The Project site is situated just outside of the intersection of two designated utility corridors, so it bounded on its northern, southwestern, and southeastern sides by linear ROWs, including transmission line, pipelines, communications lines, and roads. On December 16, 2014, the BLM sent letters to the existing ROW holders notifying them of the Project.

Table 3.10-1. Existing Easements and ROWs On and Adjacent to Project Site

Owner	Location Relative to the Preferred Project Site	Use(s)	Width (feet)	BLM Serial File Number
Western Area Power Administration	Adjacent to southeastern border of Project site.	Access Road	50 ft	CAAZLA 77757
Imperial Irrigation District	Adjacent to southeastern border of Project site.	Nyland Blythe transmission line	50 ft	CACA-008974
Southern California Edison	Adjacent to southwestern border of Project site.	Devers-Palo Verde 1 transmission line	100 ft	CA 04163
Southern California Edison	Adjacent to southwestern border of Project site.	Devers-Palo Verde 2 transmission line	130 ft	CA 17905
Imperial Irrigation District	Within CRSS	Desert Southwest transmission line	NA	CA 044491
Southern California Edison	Within CRSS	Transmission line	NA	CA 053059
SCE	Within CRSS	Transmission line	20	CA 020241
Frontier Communications of the Southwest	Adjacent to southeastern border of Project site.	Underground telephone line	10 ft	CA 21597
FPL Energy Cabazon Wind, LLC	Adjacent to southwestern border of Project site.	Transmission line	95 ft	CA 46331
North Baja Pipeline, LLC	Adjacent to southeastern border of Project site.	30 inch oil and gas pipeline	NA	CA 42662
Palo Verde Irrigation District	Blanket easement throughout T 7S, R 21E, which overlaps the Project site.	Build, construct, and maintain telephone line and irrigation ditches	NA	CA 106688

Table 3.10-1. Existing Easements and ROWs On and Adjacent to Project Site

Owner	Location Relative to the Preferred Project Site	Use(s)	Width (feet)	BLM Serial File Number

Source: BLM LR2000

The portion of the Project area located on BLM land is currently undeveloped. The Project site is a relatively flat area on the Palo Verde Mesa. The Palo Verde Mesa region is located to the north of the Mule Mountains; east of the Chuckwalla Valley; approximately 9 miles west of the Colorado River; and south of the McCoy Mountains and the Big and Little Maria Mountains. There are no Wilderness Areas, Areas of Critical Environmental Concern (ACECs), Desert Tortoise ACECs, or Wildlife Habitat Management Areas (WHMAs) within or adjacent to the solar plant site. The Mule Mountains ACEC is located less than one mile southwest of the Project boundary.

The 160-acre private parcel was previously the location of a jojoba farm. The private parcel is currently zoned Controlled Development Areas (W-2-10) (10-acre minimum) (Riverside County 2015b).

Prime Farmland, Unique Farmland, or Farmland of Statewide Importance are not present in the Project area. Williamson Act contracts are also not present (California Department of Conservation 2012; 2014). No forestlands, timberlands, or timberland zoned Timberland Production occur within the Project area.

Surrounding Land Uses

The land adjacent to the Project area includes the 200 acre, 21 MW, NRG-owned solar project which shares a boundary approximately 0.75 miles long on the northeast side of the Project area. The recently-approved 485 MW, 3,660 acre Blythe Mesa Solar Project (BMSP) is also adjacent to the Project on its eastern side.

The existing Devers-Palo Verde Transmission Line Number 1 (DPV1) and DPV2 form the southwestern boundary of the Project site, and an additional transmission line, the Ten West Link, is proposed in that same location. The 7.5 MW, 200 acre NRG Blythe PV Solar Power Plant is located adjacent to the northern boundary of the Project site. A portion of the 485 MW, 3,660 acre BMSP, approved by the County in 2014 and by the BLM in 2015, is located on a parcel of land which is surrounded on three sides, the north, west, and south, by the Project site.

Two gen-tie lines are already authorized by BLM within the Corridor K/30-52, which runs roughly in parallel with the alignment of 16th Avenue/Seeley Avenue along the southern edge of Sections 3 and 4, T 7S, R 21E, San Bernardino Base and Meridian. The ROW for the gen-tie line for the BMSP was approved by BLM in August, 2015 (CACA-05313), but has not yet been constructed. A portion of this ROW crosses the northern portion of the DQSP filing area. The gen-tie line for the MSEP is co-located with that for the BSPP. These gen-tie lines share a single set of poles.

Other land uses in the area include the unincorporated community of Mesa Verde/Nicholls Warm Springs, Blythe Airport, Blythe Energy Center, Blythe Substation, CRSS, ancillary agricultural facilities, and dirt roads.

The residential development known as Nicholls Warm Springs/Mesa Verde is located approximately 4,800 feet north of the northeast corner of the Project site boundary. This

community is mainly composed of single-family dwellings and mobile homes. A small number of dispersed farm and rural residences are located near the solar facility, mostly located to the north and east. The nearest residence is located approximately 3700 feet north of the proposed solar facility.

The Blythe Airport is located 1.5 miles northeast of the Project site. Commercial uses are located at the highway interchange south of the Airport, on the north side of I-10. The 3,904-acre airport is the largest in eastern Riverside County and serves general aviation demand in the Blythe area. The airport is classified as a general aviation transport airport, designed to accommodate business jets, cargo type aircraft, light private planes, and flight school training activities (Riverside County 2015b). The Blythe Airport currently has two runways (8/26 and 17/35). The primary runway is Runway 8/26, which is oriented generally east-west. The airport is a public facility, owned by Riverside County and leased by the City of Blythe. The airport is often used as a base for crop spraying operations, flight rental, and flight instruction (Riverside County Airport Land Use Commission 2004; Riverside County 2015b). Aircraft operations average 69 per day (AirNav.com 2015). The Blythe Airport has been designated as a County redevelopment area with the intent to encourage expansion of airport facilities and commercial and industrial development at the airport (Riverside County Redevelopment Agency 1988).

The area is also served by a spur line of the Arizona and California Railroad, I-10, and two state highways. State Highway 95 runs north from Blythe to Needles and Las Vegas. State Highway 78 traverses the desert southwest from Blythe to the Imperial Valley.

Table 3.10-2 summarizes the existing land uses and general and area plan land use designations for the Project and surrounding area.

Table 3.10-2. Surrounding Land Uses and Designations

Direction from Project Site	Existing Land Use	Existing Land Use Designation
North	Open Space	Agriculture
		Medium Density Residential
		Open Space Rural
East	Open Space	Agriculture
		Rural Residential
South	Open Space	Open Space Rural
West	Open Space	Open Space Rural

Source: Riverside County 2015b.

Utility Corridors

The CDCA Plan identifies "planning" and "contingency" utility corridors on BLM-administered land. One of the broad goals of the BLM system of utility corridors is to implement the network of joint-use planning corridors to meet projected utility needs. The CDCA Plan designates utility corridors for "multi-modal use," allowing the following types of facilities:

- New electrical gen-tie towers and cables of 161 kV or above;
- all pipelines with diameters greater than 12 inches;
- coaxial cables for interstate communications; and
- major aqueducts or canals for interbasin transfers of water.

Numerous authorized and proposed BLM ROWs are located adjacent to the Project site. The relationship of the Project site to designated utility corridors is shown in Figure 3.10-2. The Project site partially overlies two CDCA-designated corridors. Corridor J, a 2-mile-wide, north-south corridor is on the eastern edge of the Project site, and Corridor K, a 2- to 4-mile-wide, east-west corridor is parallel to the northern boundary of the Project site. Additionally, Section 368 of the EPAct (Public Law 109-58) requires the DOI to examine and designate energy transportation corridors in the West. In response, the BLM issued the "*Approved Resource Management Plan Amendments/Record of Decision (ROD) for Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States*" (January, 2009) which designated Section 368 Corridors in the western United States. Section 368 corridors are identified with a numeric designation and are often overlain on locally designated corridors. In the Project area, the 2-mile wide, east-west Section 368 Corridor 30-52 overlies Corridor K.

Two gen-tie lines are already authorized by BLM and installed within the Corridor K/30-52, which runs roughly in parallel with the alignment of 16th Avenue/Seeley Avenue along the southern edge of Sections 3 and 4, T 7S, R 21E. The ROW for the gen-tie line for the BMSP was approved by BLM in August, 2015 (CACA-05313). This ROW crosses the northern portion of the DQSP filing area. The gen-tie line for the MSEP is co-located with that for the BMSP, occupying the same set of poles.

In addition to the two CDCA-designated corridors on the northern and eastern boundaries of the Project area, the southwestern boundary of the Project area is also paralleled by transmission lines, including the existing DPV1 and DPV2 lines, and the proposed Ten West Link.

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3.11 Mineral Resources

This section discusses mineral resources relevant to the proposed DQSP. The study area for the purpose of assessing direct effects on mineral resources includes the footprint of the Project because the area would be unavailable for mineral exploration and/or extraction during the 30-year term of the BLM ROW grant. The study area for indirect effects on minerals would be any land area for which future mineral resource exploration or extraction would be precluded by Project-related closure or blockage of public roads or access routes.

3.11.1 Environmental Setting

Riverside County contains diverse mineral resources, which include extensive deposits of clay, limestone, iron, sand, and aggregates. Geologic and economic factors restrict mining operations to the relatively few locations where mineral extraction is feasible.

The BLM groups minerals on Federal lands into three distinct categories: (1) locatable resources (subject to the General Mining Law of 1872, as amended); (2) leasable resources (subject to various Mineral Leasing Acts); and (3) mineral materials resources (subject to disposal (contract sale or free-use permit) under the Materials Act of 1947, as amended) (BLM 2011). Locatable minerals include metals such as gold, silver, copper and zinc, and certain non-metallic mineral resources including high-grade limestone, gypsum, and gems and semi-precious stones. Leasable minerals include oil, gas, coal, potash, salt and geothermal resources. Mineral materials include common variety of earth materials such as sand, stone, and gravel (BLM 2010). Review of available BLM records has determined there are no active mining claims, mineral leases or disposals of mineral materials within the Project Area. There is no record of any previous or current BLM authorization for mineral production within the project area.

The State Mining and Geology Board (SMGB) have established Mineral Resource Zones (MRZs) to designate lands that contain mineral deposits, and the state has also designated Aggregate Mineral Resource areas. The Project site is designated as MRZ-4, an area where there is not enough information available to determine the presence or absence of mineral deposits. The state also designates Aggregate Mineral Resource areas within Riverside County. These designated areas are in the southwestern part of the County, and are not found on or near the Project site (Riverside County 2015a).

The Palo Verde Area Plan does not designate any areas within its boundaries for Open Space – Mineral Resources (Riverside County 2015b).

The Project area is underlain by sand and gravel, which could potentially represent a source of saleable minerals or mineral materials if local demand for construction aggregate is sufficient. Sand and gravel deposits are ubiquitous throughout the Quaternary geologic deposits in the vicinity of the Project area and the region.

The Mineral Resources Data System (MRDS), administered by the USGS, provides data to describe metallic and nonmetallic mineral resources, including deposit name, location, commodity, deposit description, production status and references. According to review of the MRDS online database, metallic resources and occurrences (such as gold, silver, manganese, and

copper) are located in the Mule Mountains to the southwest, but metallic resources are not located in the Project area (USGS 2016).

A review of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, indicates that oil, gas, or geothermal resources are not present within or in the vicinity of the Project area (DOGGR 2016). The State Division of Oil and Gas does not report any significant or active oil or gas production in the County (Riverside County 2015a).

The use of the site for rockhounding is addressed in Section 3.14.

3.12 Noise

This section describes the environmental setting in regards to noise for the proposed Project and alternatives.

3.12.1 Environmental Setting

3.12.1.1 General Information on Noise

Noise can be defined as unwanted sound. Human response to noise is most commonly expressed as an annoyance, the level of which may be affected by the amplitude (intensity or energy content) of the noise, its frequency (pitch), its duration of exposure, and/or its recurrence. Environmental noise is measured in decibels (dB). The A-weighted decibel scale (dBA) is used to approximate the range of sensitivity of the human ear to sounds of different frequencies. A noise level is a measure of noise at a given instance in time. A change in level of at least 5 dBA is noticeable to most people, and a 10-dBA increase is judged by most people as a doubling of the sound level. Typical noise sources and noise environments for common indoor and outdoor activities are listed in Table 3.12-1.

Table 3.12-1. Typical Noise Sources and Noise Environments

Common Outdoor Activities	Noise Levels (dBA)	Common Indoor Activities
Jet Fly-over at 1,000 feet	110-120	Rock Band
Gas Lawn Mower at 3 feet	90-100	N/A
Diesel Truck at 50 feet, at 50 mph	80-90	Food Blender at 3 feet
Commercial Area, Gas Lawn Mover at 100 feet	70	Vacuum Cleaner at 10 feet
Heavy Traffic at 300 feet	60	Normal Speech at 3 feet
Quiet Urban Area (daytime)	40-50	Large Business Office
Quiet Urban Area/Suburban Nighttime	30-50	Theater, large Conference Room (background)
Quiet Rural Nighttime	20-30	Library, Bedroom at Night, Concert Hall (background)
N/A	20-10	Broadcast/Recording Studio

Source: Caltrans 2009.
mph = miles per hour
N/A = not available

The decibel scale is based on logarithms, and two noise sources do not combine in a simple additive fashion; rather, they combine logarithmically. For example, if two identical noise sources produced noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Exposure and Community Noise

Community noise is primarily the product of many distant noise sources, which change gradually throughout a typical day. During the nighttime, exterior background noises are generally lower than the daytime levels. Most household noise also decreases at night and exterior noise becomes more noticeable. Further, most people sleep at night and are more sensitive to noise intrusion during evening and nighttime hours. To account for human sensitivity to noise levels at differing

times of day, the Community Noise Equivalent Level (CNEL) was developed. CNEL is a noise index that accounts for the greater annoyance of noise during the evening and nighttime hours. CNEL values are calculated by averaging hourly Leq (equivalent continuous noise level) sound levels for a 24-hour period, and apply a weighting factor to evening and nighttime Leq values. To account for the fluctuation in noise levels over time, noise impacts are commonly evaluated using time-averaged noise levels. The weighting factor, which reflects increased sensitivity to noise during evening and nighttime hours, is added to each hourly Leq sound level before the 24-hour CNEL is calculated. For the purposes of assessing noise, the 24-hour day is divided into three time periods with the following weighting:

- Daytime: 7 a.m. to 7 p.m., weighting factor of 0 dB
- Evening: 7 p.m. to 10 p.m., weighting factor of 5 dB
- Nighttime: 10 p.m. to 7 a.m., weighting factor of 10 dB

Effect of Noise

People experience a wide range of sounds in the environment. Excessive noise can be not only undesirable, but may also cause physical and/or psychological damage. The amount of annoyance or damage caused by noise is dependent primarily upon the amount and nature of the noise, the amount of ambient noise present before the intruding noise, and the activity of the person working or living in the area. Environmental and community noise levels rarely are of sufficient intensity to cause irreversible hearing damage, but disruptive environmental noise can interfere with speech and other communication and be a major source of annoyance by disturbing sleep, rest, and relaxation.

Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, the higher noise levels nevertheless are considered to be adverse to public health. The surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments tend to be about 7 dB lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation that are subject to nighttime noise are often considered objectionable because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference effects. At 70 dBA, sleep interference effects become considerable (USEPA 1974).

In some cases, noise can also disrupt the normal behavior of wildlife. Although the severity of the effects varies depending on the species being studied and other conditions, research has found that wildlife can suffer adverse physiological and behavioral changes from intrusive sounds and other human disturbances (National Park Service [NPS] 2009).

Noise Attenuation

Sound level naturally decreases as one moves farther away from the source. The ground surface (reflective or absorptive) is also a factor in the sound levels. Point sources of noise, such as stationary mobile equipment or on-site construction equipment, attenuate (lessen) at a rate of 6.0 dBA per doubling of distance from the source when in an area with a reflective ground surface

(e.g., parking lots). In areas where the ground is absorptive (e.g., soft dirt, grass, or scattered bushes and trees), noise attenuation from a point source is 7.5 dBA for each doubling of distance due to ground absorption (Caltrans 1998).

Widely distributed noises, such as a street with moving vehicles (a "line" source), typically would attenuate at a lower rate of approximately 3.0 dBA for each doubling of distance between the source and the receiver. If the ground surface between source and receiver is absorptive, the excess ground attenuation rate would be 4.5 dBA for each doubling of distance (Caltrans 1998).

Noise from large construction sites would have characteristics of both "point" and "line" sources, so attenuation would generally range between 4.5 and 7.5 dBA per doubling of distance. Noise attenuation rates for both line and point sources of noise may also be influenced by atmospheric effects, such as wind and temperature gradients. Trees and vegetation, buildings, and barriers reduce the noise level that would otherwise occur at a given receptor distance.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as a maximum instantaneous peak of the vibration signal and is typically expressed in units of inches per second (in/sec). The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

3.12.1.2 Project Setting

The Project setting and ambient noise conditions were provided in the Applicant's Noise Technical Report (URS 2015, provided in Appendix R). The Project site is located in the Colorado Desert in eastern Riverside County. Most of the surrounding land is covered by desert scrub. The site is approximately 2.75 southwest of the City of Blythe and just south of I-10. The land use of the Project site is undeveloped open space, and the surrounding land uses include undeveloped open space and agriculture.

Sensitive Receptors

In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries are also sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive.

The nearest noise sensitive receptors are shown illustrated in Figure 3.12-1, along with the 11 locations were ambient noise levels were measured. There are no residences within 0.5-mile of the Project area. The nearest noise sensitive receptor (NNSR) is located approximately 4,800 feet north of the northeastern Project boundary (where it coincides with 16th Avenue/Seeley Avenue) in between the Project site and the community of Nicholls Warm Springs/Mesa Verde. The receptor appeared to be an occupied mobile home/trailer at the time of the field reconnaissance

in August 2014. The next two closest potentially affected sensitive receptors are located approximately 4,800 feet (ST03 and ST05) from the Project site's northeast boundary, respectively. These two locations are representative of the homes in the community of Nicholls Warm Springs/Mesa Verde closest to the northeastern site boundary. No schools, hospitals, libraries, or convalescent homes are located within one mile of the proposed Project.

Existing Ambient Noise Conditions

The primary noise sources in the proposed Project area are traffic from I-10 and nearby roadways; airplane noise from the Blythe Airport; sounds from the agricultural operations; sounds emanating from neighborhoods (e.g., voices, radio and television broadcasts); and naturally occurring sounds (e.g., winds, wind-generated noises).

I-10 is a major transportation artery and the primary noise source in the area. Noise measurements within 300 feet of I-10 range from 65 dBA to levels exceeding 82 dBA caused by the passage of heavy trucks. During peak use periods, traffic noise levels can range from 80 to 90 dBA at 50 feet from the shoulder of the interstate. State Route 78 experiences lower traffic volumes and vehicle speeds and therefore likely has somewhat lower associated noise levels. Agricultural activities are conducted on land near the proposed Project boundary. Noise associated with farming activities includes that generated by heavy equipment used for cultivation and harvesting. Maximum noise levels associated with farm equipment typically range from 75 to 85 dBA at a distance of 50 feet. Noise impact contours for the Blythe Airport range from 65 CNEL, 60 CNEL, to 55 CNEL. The most stringent noise contour boundary (55 CNEL) is approximately 1,000 feet from the runways (RCALUCP 2004).

In August, 2014, the Applicant measured existing outdoor ambient sound levels at a set of 11 representative receiver locations for 20 minutes at each location. The dominant noise source at and around the vicinity of the site is vehicular traffic from local roadways and I-10. Noise levels ranged from 39 to 63 dBA (Table 3.12-2). Locations within Blythe (ST07 and 08), closer to I-10 (ST04, 06, 10) and along 16th Avenue/Seeley Avenue (ST09) generally had higher ambient noise levels than sites within or south of Nicolls Warm Springs/Mesa Verde and closer to the Project area (ST03, 05, 11).

Table 3.12-2. Short-Term Sound Level Measurement Results[1]

Measurement Location[2]	Date (m/dd/yyyy)	Start Time (hh:mm)	Stop Time (hh:mm)	Duration (Minutes)	Leq (dBA)
ST01	8/19/2014	18:20	18:40	20	44
	8/19/2014	23:17	23:37	20	41
ST02	8/19/2014	18:47	19:07	20	45
	8/19/2014	23:43	00:03	20	46
	8/20/2014	11:59	12:19	20	45
ST03	8/19/2014	22:46	23:06	20	39
	8/20/2014	10:59	11:19	20	39
ST04	8/20/2014	11:29	11:49	20	52
ST05	8/20/2014	12:29	12:49	20	40
ST06	8/20/2014	12:58	13:18	20	63
ST07	8/20/2014	14:33	14:53	20	54
ST08	8/20/2014	15:04	15:24	20	59
ST09	8/20/2014	15:34	15:54	20	51
ST10	8/20/2014	16:10	16:30	20	57

Table 3.12-2. Short-Term Sound Level Measurement Results[1]

Measurement Location[2]	Date (m/dd/yyyy)	Start Time (hh:mm)	Stop Time (hh:mm)	Duration (Minutes)	Leq (dBA)
ST11	8/20/2014	17:46	18:06	20	41

Notes
1 Source: Ambient noise field measurements by URS personnel in August 2014.
2 Refer to Figure 3.12-1 for measurement locations.

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3.13 Paleontological Resources

Paleontological resources, or fossils, are the remains of extinct organisms, and provide the only direct evidence of ancient life. They are considered to be non-renewable resources because they cannot be replaced once they are destroyed. For the purpose of this analysis, and in accordance with existing BLM policy, scientifically significant paleontological resources are defined as vertebrate fossils that are identifiable to taxon and/or element, noteworthy occurrences of invertebrate and plant fossils, and vertebrate trackways. The study area associated with paleontological resources would be the land disturbance area of the Project associated with construction, operation and maintenance, and decommissioning.

3.13.1 Environmental Setting

3.13.1.1 Geologic Setting

Geology

A surficial geologic map of the Project area is presented in Figure 3.7-1. As presented in Table 3.13-1, there are differences in terminology between the maps presented in the Applicant's Preliminary Geotechnical Report (URS 2011, provided in Appendix S) and in the Applicant's Preliminary Paleontological Resources Assessment Technical Report (Reynolds and Lander 2016, provided in Appendix T). The Geotechnical Report is generally based on mapping by Stone (2006), while the Paleontological Report is based on a map complied by Hayhurst and Bedrossian (2010), and modified by Reynolds et al. (2008). Although the maps are very similar, they use different terminology, and there is at least one difference in interpretation of age that has been considered in the evaluation of impacts to paleontological resources. The geologic map presented in Figure 3.7-1 is the one from the Preliminary Geotechnical Report, and the terminology used in this section is derived from that report. However, the descriptions of the geologic units below are also cross-referenced to the terminology used in the map from the Preliminary Paleontological Resources Assessment Technical Report.

Table 3.13-1. Correlation of Geologic Units Between Applicant's Preliminary Geotechnical Report and Applicant's Paleontological Resources Assessment Technical Report

Age of Geologic Unit	Name and Abbreviation from Preliminary Geotechnical Report[1]	Name and Abbreviation from Paleontological Resources Assessment Technical Report[2]
Late Holocene	Qw – alluvium of modern washes	Qw – active alluvial wash deposits
Late Pleistocene to late Holocene	Qs – eolian sand	Qe – stabilized/active eolian/dune deposits
Late Holocene	Qa6 – alluvial fan and alluvial valley deposits	Qf-1 – active alluvial fan deposits
Late Pleistocene to Holocene		Qf-2 – stabilized alluvial fan deposits
Middle to late Pleistocene	Qpv – alluvial deposits or Palo Verde Mesa	Qot – old terrace deposits
Pliocene or Pleistocene to Holocene[3]	Qa3 – alluvial fan and valley deposits	Tba – Bullhead Alluvium

Table 3.13-1. Correlation of Geologic Units Between Applicant's Preliminary Geotechnical Report and Applicant's Paleontological Resources Assessment Technical Report

Age of Geologic Unit	Name and Abbreviation from Preliminary Geotechnical Report[1]	Name and Abbreviation from Paleontological Resources Assessment Technical Report[2]

1 – Source is Figure 3 of the Preliminary Geotechnical Report (Appendix S). This map is included in the PA/EIS/EIR as Figure 3.7-1.
2 – Source is Figure 2 of the Paleontological Resources Assessment Technical Report (Appendix T).
3 – The two authors disagree on the age and assignment of this unit, which is found at the extreme northern end of the ROW application area. Because this area is not included within any of the Project alternatives, the disparity between the names and age does not affect the impact analysis.

Pliocene, Pleistocene, and Holocene alluvium and dune sand overlays the older bedrock throughout the Project site. The oldest geologic unit within the Project study area is a unit identified as Unit 3, Holocene to Pleistocene alluvial fan and valley deposits, in Hayhurst and Bedrossian (2010) and URS (2011), and as the Pliocene Bullhead Alluvium in Reynolds and Lander (2016). This unit is found at the very northern end of the proposed ROW area. If interpreted as the Bullhead Alluvium, these sediments were deposited between 3 and 4 million year (Ma) ago. This unit is outside of the footprint of any of the Project alternatives, so the question of its correct age and potential for significant paleontological resources is likely to be moot.

The remainder of the Project site is underlain by alluvial and dune sand units of later Quaternary age. The largest portion of the site consists of Pleistocene age alluvial deposits of the ancestral Colorado River, designated Qpv in URS (2011), and Qot in Reynolds and Lander (2016). This unit consists of moderately indurated, poorly graded sand, gravel, boulders, silt, and clay.

The Qot unit is overlain by Holocene age alluvial-fan and alluvial-valley deposits, designated Qa6 in URS (2011), and split into two separate units, Qf1 and Qf2, in Reynolds and Lander (2016). This unit comprises the western and northern portion of the Project site, and is characterized by unconsolidated sand, gravel, silt, and clay derived from the Big Maria and the Mule Mountains. This unit comprises the Upper Terrace of Palo Verde Mesa. It is the oldest terrace surface in the region, and underlies the southeastern two thirds of the Project area at elevations between 400 and 364 feet. Palo Verde Mesa and the Upper Terrace slope to the south to an elevation of about 335 feet near the Rio Mesa Project area.

Aeolian sand, designated Qs in URS (2011) and Qe in Reynolds and Lander (2016) is found in the northwestern portion of the site, along the proposed route of the gen-tie line. This unit is thought to be composed of wind-blown sand derived from Ford Dry Lake to the west in Chuckwalla Valley. The unit is mapped as late Holocene by Hayhurst and Bedrossian (2010). However, Reynolds and Lander (2016) interpret this unit to include stabilized deposits of late Pleistocene age in the shallow subsurface, overlain by active aeolian and sand dune deposits of late Holocene age.

A very localized occurrence of Holocene age alluvium associated with modern washes, designated Qw in both URS (2011) and Reynolds and Lander (2016), has been mapped in the southwestern corner of the site. These deposits are comprised of unconsolidated sand and gravel eroded from nearby mountain ranges.

Paleontological Resources

The Bullhead Alluvium in the Project study area has a moderate potential for containing significant vertebrate fossils. This unit is reported to have produced the fossilized rib of a horse south of Topock, Arizona (Reynolds and Lander 2016).

The paleontological resources of the Pleistocene sedimentary units in the area were studied in association with the proposed Rio Mesa Solar Project site, located 6 miles southeast of the DQSP, in 2012 (Stewart 2012; Stewart et al. 2012). The Qot unit of Hayhurst and Bedrossian (2010) that is present at the DQSP Project site is also present at the Rio Mesa Project area, and vertebrate fossils were recovered from a 12-foot-thick paleosol (preserved soil horizon) at the Rio Mesa Project site (Stewart 2012). Fossils recovered from the "Palo Verde Mesa paleosol" include more than 800 vertebrate specimens representing birds, snakes, lizards, *Gopherus* (Mojave desert tortoise), *Sylvilagus* (cottontail), *Lepus* (jackrabbit), rodents, *Taxidea* (badger), bighorn sheep, *Odocoileus* (deer), *Equus* (horse), and *Mammuthus* (mammoth). These fossil occurrences suggest that similar deposits in the DQSP Project area have a high potential for producing scientifically important vertebrate fossil remains of late Pleistocene age. The level of potential is to be determined during the pre-construction field survey.

If stabilized aeolian and alluvial sand dune deposits of Pleistocene age are present in the shallow subsurface, then they may contain vertebrate fossils from the end of the latest Pleistocene pluvial period, less than 17 thousand years (ky) ago (Reynolds 2004). Vertebrate fossils have been identified in similar stabilized dune fields of Pleistocene age in Colton, on the western side of the Old Dad Mountains, west of Kelso at Flynn, and north of Baker at Silver Lake. The active portion of the dune field may contain reworked Pleistocene fossil remains, similar to those found at the Rio Mesa Project area (Stewart 2012). These fossil occurrences suggest that the older, stabilized dune field in the Project area has a potential for producing scientifically important vertebrate fossil remains of latest Pleistocene age.

The active late Holocene alluvial wash deposits have produced no fossil remains in the region. However, fan deposits have been deposited in the region for more than a million years and, consequently, these deposits might overlie fossils in the shallow subsurface.

3.13.1.2 Paleontological Resource Classifications

Potential Fossil Yield Classification System

The BLM uses the Potential Fossil Yield Classification (PFYC) system to assess the potential for discovery of significant paleontological resources or the impact of surface disturbing activities to such resources by using a five-class ranking system (BLM 2007):

1. **Class 1 – Very Low.** Geologic units that are not likely to contain recognizable fossil remains. This class usually includes units that are igneous or metamorphic, excluding reworked volcanic ash units; or units that are Precambrian in age or older. Management concern for paleontological resources in Class 1 units is usually negligible or not applicable and assessment or mitigation is usually unnecessary except in very rare or isolated circumstances. The probability for impacting any fossils is negligible and assessment or mitigation of paleontological resources is usually unnecessary.
2. **Class 2 – Low.** Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils. This class typically includes vertebrate

or significant invertebrate or plant fossils not present or very rare, units that are generally younger than 10,000 years before present, recent aeolian deposits, or sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration). Management concern for paleontological resources is generally low. Assessment or mitigation is usually unnecessary except in rare or isolated circumstances and the probability for impacting vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Localities containing important resources may exist, but would be rare and would not influence the overall classification. These important localities would be managed on a case-by-case basis.

3. **Class 3 – Moderate or Unknown.** Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential. This class includes sedimentary rocks that are marine in origin with sporadic known occurrences of vertebrate fossils or other rocks where vertebrate fossils and scientifically significant invertebrate or plant fossils are known to occur intermittently. The predictability of fossils within these units is known to be low or the units have been poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance. This class is subdivided into two groups: Class 3(a) and Class 3(b).

   a) Class 3(a) is assigned to rock units where sufficient information has been developed to know that the unit has widely scattered occurrences of vertebrate fossils and/or scientifically significant invertebrate or plant fossils. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for hobby collecting.

   b) Class 3(b) is assigned to rock units that exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and the field survey may uncover significant finds. The units in this Class may eventually be placed in another Class when sufficient survey and research is performed.

4. **Class 4 – High.** Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface disturbing activities may adversely affect paleontological resources in many cases. This class is subdivided into two groups, based primarily on the degree of soil cover: Class 4(a) and Class 4(b):

   a) Class 4(a) is assigned to rock units that are exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two acres. Paleontological resources may be susceptible to adverse impacts from surface disturbing actions and illegal collecting activities may impact some areas.

   b) Class 4(b) is assigned to areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

5. **Class 5 – Very High.** Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation. This class is subdivided into Class 5(a) and Class 5(b) in the same manner as Class 4 above.

Society of Vertebrate Paleontology

The County of Riverside uses the Society of Vertebrate Paleontology (SVP) definitions for four categories of paleontological resource potential (potential for rock units: high, low, undetermined, and no potential) (SVP 2010):

High Potential. Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include, but are not limited to, sedimentary formations, volcanic formations, and sedimentary rock units. Sensitivity comprises both (a) the potential for yielding significant vertebrate, invertebrate, or botanical fossils, and (b) the importance of recovery evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas that contain potentially datable organic remains older than Recent are also classified as significant.

Low Potential. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potential for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.

Undetermined Potential. Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.

No Potential. Metamorphic and granitic rock units do not yield fossils and therefore have no potential to yield significant non-renewable fossiliferous resources.

3.13.1.3 Paleontological Resources Assessment

Reynolds and Lander (2016) prepared a Paleontological Resources Assessment Technical Report in support of this Draft PA/EIS/EIR (Appendix T).

Literature Review

The inventory and assessment included review of surficial geologic maps of the Project area by Stone (2006) and Hayhurst and Bedrossian (2010), supplemented by previous research in the local area by Reynolds (Reynolds 2004; Reynolds et al. 2008), and information from the field surveys at the proposed Rio Mesa Solar Project site, located 6 miles southeast of the DQSP (Stewart 2012; Stewart et al. 2012). Information from the literature review was compared to Google Earth aerial imagery covering the Project site. Paleontological and geologic literature associated with the geologic units in the Project area was reviewed to determine the potential for the occurrence of paleontological resources on the Project site. Archival searches were conducted by the Natural History Museum of Los Angeles County Department of Vertebrate Paleontology (LACM), and the San Bernardino County Museum (SBCM), to identify additional information on fossil localities, and to document the occurrence of any other previously recorded but unpublished fossil locality from stratigraphic units in or near the Project site. The results of the data searches were used to compile a paleontological resource inventory of the Project area

by stratigraphic unit and to assess the paleontological productivity of each unit using the BLM PFYC system.

Records Search Results

The review of museum collection records at the LACM and SBCM did not identify any vertebrate fossil localities in the Project area. Vertebrate fossil localities were reported within similar alluvial deposits in the region, but not within close proximity to the Project site. The assessment determined that shallow excavations in the younger Quaternary Aeolian and alluvial fan sediments were unlikely to encounter significant vertebrate fossil remains. Excavations within the older Quaternary deposits could uncover significant vertebrate fossils. Therefore, both the LACM and SBCM reports recommended monitoring and mitigation during any excavation activities.

Field Survey

The Paleontological Resources Assessment did not include a field survey. Based on the results of the literature and records search, a field survey was recommended to be conducted in order to complete the BLM PFYC evaluation prior to construction.

Preliminary Potential Fossil Yield Classifications

Table 3.13-2 presents the preliminary potential fossil yield (PFY) classifications of the geologic units present at the Project site.

Table 3.13-2. Preliminary PFY Classifications at the Project Site

Stratigraphic Unit	Preliminary PFYC[1]	Description and Basis (BLM IM 2008-009; see Appendix C of Reynolds and Lander 2016)
Bullhead Alluvium (Tba) (Pliocene) (unit Qa3 in Figure 3.7-1)	3a (Moderate) or 4a (high)	• These sediments contain vertebrate fossils, but occurrences are widely scattered.
Old terrace deposits (Qot) (middle to late Pleistocene) (unit Qpv in Figure 3.7-1)	5a (Very High)	• Highly fossiliferous geologic units that regularly and predictably produce vertebrate fossils, and that are at risk of human-caused adverse impacts or natural degradation. • Vertebrate fossils are known and documented to occur consistently, predictably, at one locality/five acres. • Unit is exposed. Paleontological resources are highly susceptible to adverse impacts from surface-disturbing actions.
Stabilized Alluvial Fan Deposits (Qf2) (late Pleistocene to Holocene) (unit Qa6 in Figure 3.7-1)	3b (Unknown)	• Unit interfingers with old terrace deposits (unit Qot) and, therefore, might contain a similar fossil vertebrate fauna.
Active Alluvial Fan Deposits (Qf1) (late Holocene) (unit Qa6 in Figure 3.7-1)	2 (Low)	• Sedimentary geologic units that are not likely to contain vertebrate fossils. • Units younger than 10,000 years before present.

Table 3.13-2. Preliminary PFY Classifications at the Project Site

Stratigraphic Unit	Preliminary PFYC[1]	Description and Basis (BLM IM 2008-009; see Appendix C of Reynolds and Lander 2016)
Stabilized Aeolian and Dune Deposits (Qe) (late Pleistocene) (unit Qs in Figure 3.7-1)	3b (Unknown)	• Unit exhibits geologic (stratigraphic) features and preservational conditions that suggest significant fossils could be present.
Active Aeolian and Dune Deposits (Qe) (late Holocene) (unit Qs in Figure 3.7-1)	2 (low)	• Sedimentary geologic units not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils. • Units younger than 10,000 years before present. • Recent aeolian deposits.
Active Alluvial Wash Deposits (Qw) (late Holocene) (unit Qw in Figure 3.7-1)	2 (Low)	• Sedimentary geologic units that are not likely to contain vertebrate fossils. • Units younger than 10,000 years before present.

Note:
1 – Preliminary PFYC is pending a field survey.

Preliminary SVP Categories

The privately-owned parcel within the Project area is assessed using the Riverside County guidelines for determining the sensitivity of sedimentary units at a project site. The private parcel is entirely underlain by the old terrace (Qot) deposits. Based on its documented paleontological productivity (Stewart 2012; Stewart et al. 2012), the old terrace deposits are assigned High A and B productivity ratings, indicating that the unit has a high potential for containing fossil remains at the surface and in the subsurface.

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3.14 Recreation and Public Access

The following discussion addresses existing recreational resources within the vicinity of the Project and describes existing laws and regulations relevant to those resources. For the purposes of this analysis, "vicinity" has been defined as the area within 20 miles of the Project site. This is an appropriate study area for recreation because it captures all major recreation resources that contribute to baseline conditions and could potentially be affected by activities related to the Project.

For the purpose of this section, the terms o*ff-road vehicles* and *off-highway vehicles* (OHV) are used interchangeably (OHV is the term most used in BLM and other Federal land use planning).

3.14.1 Environmental Setting

3.14.1.1 Recreation Resources on the Project Site

The types of recreational uses that may occur at the site are governed by the CDCA Plan (BLM 1980); and the NECO Plan Amendment to the CDCA Plan (BLM 2002). The site is designated in the CDCA Plan for Multiple-use Class M, or Moderate Use (BLM 1980). Class M lands are suitable for a wide range of recreation activities which may involve moderate to high user densities, including backpacking, primitive unimproved site camping, hiking, horseback riding, rockhounding, nature study and observation, photography and painting, rock climbing, spelunking, hunting, landsailing on dry lakes, noncompetitive vehicle touring, mountain and trail biking, and competitive motorized-vehicle events only on "existing" routes of travel (BLM 1980; BLM 2002). Stopping, parking, and vehicle camping are allowed to occur within 300 feet of a route, except within sensitive areas such as Areas of Critical Environmental Concern (ACECs), where the limit is 100 feet (BLM 2002). Trails are open for non-vehicular use and new trails for non-motorized access may be allowed (BLM 1980). Recreational vehicle use, including OHV use, is discussed below in Sections 3.14.1.2 and 3.14.1.3. There are no recreation facilities, developments, or specific recreational attractions on the site. There are no specifically known resources or deposits that attract rockhounding onsite. Visitor numbers are expected to be low within the Project area, due to the availability and accessibility of recreation opportunities in the surrounding area.

3.14.1.2 Recreation Resources In the Vicinity of the Project Site

The Palo Verde Valley offers multiple outdoor recreational opportunities for boating, water skiing, jet skiing, swimming, fishing, canoeing, camping, rock hounding, hiking, mountain and trail biking, archery, hunting, horseback riding, trapping, trap and skeet shooting, and OHV use.

BLM-Administered Recreation Resources

The CDCA Plan and the NECO Plan Amendment to the CDCA Plan govern the types of recreational uses on BLM lands within the Project area. The BLM-managed lands within the Project area are designated in the CDCA Plan as Multiple-Use Class M (Moderate Use), which provides for a wide variety of present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Given the desert's vast expanse and great distances

to recreation sites, it is difficult, if not impossible, in many circumstances, to engage in recreational activities in this region without employing a motorized vehicle in some fashion. In accordance with the CDCA Plan, motorized-vehicle access would be managed with Multiple-Use Class guidelines. Vehicle access in Multiple-Use Class M areas would be allowed on existing routes unless it is determined that use must be further limited. Designated Class L lands are located north of I-10, just north of the Project area. These lands are suitable for recreation activities that generally involve low to moderate user densities, including backpacking, primitive unimproved site camping, hiking, horseback riding, rockhounding, nature study and observation, photography and painting, rock climbing, spelunking, hunting, landsailing on dry lakes, noncompetitive vehicle touring, mountain and trail biking, and events only on "approved" routes of travel (BLM 1980 and 2002). Stopping, parking, and vehicle camping are allowed to occur within 300 feet of a route, except within sensitive areas such as ACECs, where the limit is 100 feet (BLM 2002). Trails are open for non-vehicular use and new trails for non-motorized access may be allowed (BLM 1980).

The BLM administers wilderness areas, Long Term Visitor Areas (LTVAs), ACECs, and other recreational opportunities in the vicinity of the Project, which are listed in Table 3.14-1 and illustrated in Figure 3.14-1. ACECs and wilderness also provide dispersed recreation opportunities in the region. Overall, recreation use on BLM lands in the vicinity of the Project is limited to the cooler months of September through May, with little or no use in the summer. Popular recreation activities include car and recreational vehicle (RV) camping, OHV riding and touring, hiking, photography, hunting (dove, quail, deer), sightseeing, and visiting cultural sites. Local residents and long-term winter visitors make up the majority of the use. For detailed information on the ACECs and wilderness areas, please see Section 3.16, *Special Designations and Lands with Wilderness Characteristics*.

Table 3.14-1. BLM-Administered Recreational Areas and Opportunities in the Project Vicinity

Recreational Area	Distance from Project (miles)
ACEC	
Mule Mountains	1.0
Chuckwalla Desert Wildlife Management Area	13.1
Chuckwalla Valley Dune Thicket	7.2
Big Marias	14.4
Palen Dry Lake	19.6
Wilderness Areas	
Palen/McCoy	18.5
Big Maria Mountains	12.5
Little Chuckwalla Mountains	11.4
Chuckwalla Mountains	19.0
Palo Verde Mountains	10.5
Rice Valley	19.1
Trigo Mountain	19.4
Long Term Visitor Area (LTVA)	
Midland LTVA	11.4
Mule Mountains LTVA	8.3
Campground	
Wiley's Well Campground	8.0

Table 3.14-1. BLM-Administered Recreational Areas and Opportunities in the Project Vicinity

Recreational Area	Distance from Project (miles)
Coon Hollow Campground	10.7
Trail	
Bradshaw Trail	4.2

Source: Compiled by AECOM in 2015.

Wilderness Areas

Seven wilderness areas are located in the vicinity of the Project: the Palen-McCoy Wilderness, Big Maria Mountains Wilderness, Little Chuckwalla Mountains Wilderness, Chuckwalla Mountains Wilderness, Palo Verde Mountains Wilderness, Rice Valley Wilderness, and Trigo Mountain Wilderness. The Wilderness Act limits allowable types of recreation on wilderness lands to those that are primitive and unconfined, depend on a wilderness setting, and do not degrade the wilderness character of the area. Motorized or mechanized vehicles or equipment are not permitted in wilderness. The BLM regulates such recreation on such lands within its jurisdiction in accordance with the policies, procedures and technologies set forth in 43 CFR Part 6300, BLM Manual 6340 (Management of Designated Wilderness Areas) (BLM 2012d), and BLM's Principles for Wilderness Management in the California Desert (BLM 1995).

These wilderness areas in the vicinity of the Project have no developed trails, parking/trailheads, or other visitor use facilities (BLM 2014a-g). These areas are generally steep, rugged mountains, with no permanent natural water sources, thus limiting extensive hiking or backpacking opportunities. BLM does not collect visitor use counts in these areas, but BLM staff estimated, in 2011, that there are approximately 100 to 200 hikers per year within each of the wilderness areas. More popular is vehicle camping along roads that are adjacent to the wilderness areas. RV camping near wilderness areas, with associated hiking, OHV use, photography, sightseeing, etc. accounts for up to 2,000 visitors per year (BLM 2011, as cited in BLM 2012b).

Long Term Visitor Areas (LTVAs)

The BLM manages LTVAs, which accommodate visitors who wish to camp for as long as seven consecutive months. Winter visitors who wish to stay in an LTVA must purchase either a long-term permit for $180 that is valid for the entire season or any part of the season (which runs from September 15 through April 15), or a short visit permit for $40 that is valid for 14 consecutive days. Between the dates of April 15 to September 15, there is no trash pick-up and toilets are closed. Permit holders may move from one LTVA to another within the permitted timeframe without incurring additional fees. Activities in and use of LTVAs are regulated by the rules of conduct set forth in 43 CFR subpart 8365 and the 35 supplemental rules that the BLM has determined are necessary to provide for public safety and health and to reduce the potential damage to natural and cultural resources of the public lands (BLM 2015a).

Two LTVAs are located in the vicinity of the Project area: Midland LTVA and Mule Mountains LTVA. Both provide long-term camping opportunities. In addition to long-term camping, recreational opportunities at LTVAs include hiking; OHV use; rockhounding; viewing cultural

sites, wildlife, and unique desert scenery; and solitude. The landing or take-off of aircraft, including ultra-lights and hot air balloons, is prohibited in LTVAs (BLM 2015b).

Two campgrounds are located within the boundaries of the Mule Mountains LTVA: Wiley's Well and Coon Hollow Campgrounds. Both are year-round facilities with campsites, picnic tables, grills, shade armadas, and handicapped-accessible vault toilets (BLM 2015c; BLM 2015d). In fiscal year 2015, the Midland LTVA received 16,545 individual visits, totaling 24,818 visitor days. The Mule Mountain LTVA received 16,752 individual visits, totaling 25,896 visitor days (BLM 2016).

Under DRECP, LTVAs and campgrounds are classified as Level 1 recreation facilities.

Dispersed camping is allowed on public lands for no more than a period of 14 days in any 30-day period. The 14-day limit may be reached either through a number of separate visits or through 14 days of continuous overnight occupation during the 30-day period; campers must relocated to another site at least 25 miles away for forty-eight hours, before returning.

Areas of Critical Environmental Concern

Five ACECs are within 20 miles of the Project area: Mule Mountains, Chuckwalla Valley Dune Thicket, Chuckwalla Desert Wildlife Management Area, Big Marias, and Palen Dry Lake. Recreation activities allowed in ACECs are determined by the resources and values for which the ACECs were established, and by the associated ACEC Management Plan. Most ACECs allow low-intensity recreation use that is compatible with protection of the relevant values.

Mule Mountains ACEC primarily protects cultural resources. The Chuckwalla Desert Wildlife Management Area was designated to protect Mojave desert tortoise and significant natural resources. Chuckwalla Valley Dune Thicket and Palen Dry Lake ACECs protect both natural and cultural resources. These ACECs do not have recreation use facilities, but have signage to inform visitors of the special values of the areas and associated protection measures. Under DRECP, these areas are classified as Level 3 recreation facilities.

The Bradshaw Trail

The BLM-administered portion of the Bradshaw Trail is a 70-mile Back Country Byway that begins about 35 miles southeast of Indio, California and ends about 14 miles southwest of Blythe (BLM 2010; BLM 2012e). The Riverside County PVVAP Trails and Bikeway map shows a route for the Bradshaw Trail that continues east of this location through Blythe to the Colorado River (Riverside County 2010). The trail was the first road through Riverside County, created by William Bradshaw in 1862 as an overland stage route beginning in San Bernardino, California, and ending at Ehrenberg, Arizona. The trail was used extensively between 1862 and 1877 to transport miners and passengers. The trail is a graded dirt road that traverses mostly public land between the Chuckwalla Mountains and the Chocolate Mountain Aerial Gunnery Range.

Regional Recreation Resources

The Riverside County Regional Park and Open-Space District also provides several recreational facilities in the Project vicinity. A regional trail is proposed by the County along an existing railroad line (Riverside County 2010). The Regional Park and Open-Space District also owns Mayflower Park, Riviera Marina Park, and McIntyre Park, which all provide long- and short-stay

RV and tent camping, showers, picnicking, fishing, and boat launching (Riverside County Regional Park and Open-Space District 2015a and b, Desert USA.com 2015). Riverside County Regional Park and Open-Space District also owns and operates the Goose Flats Wildlife Area, which provides boating and fishing opportunities (Desert USA.com 2015). The aforementioned facilities are illustrated in Figure 3.14-2.

There is also one regional park in Imperial County, Palo Verde Park, which is located just south of the town of Palo Verde on the Colorado River adjacent to the Cibola National Wildlife Refuge (Desert USA.com 2015; Imperial County 2016).

Other Recreational Areas and Opportunities

The City of Blythe provides year-round sporting activities. The Blythe Parks Department oversees eight parks (approximately 74 acres total), including five neighborhood parks, two community parks, and one regional park (See California.com 2015). The "Big Foot Skate-board Park" is located at Todd Park (See California.com 2015), which is approximately 8 miles from the Project area. Other nearby City of Blythe parks include Appleby Park and Miller Park, (See California.com 2015). The Blythe Municipal Golf Course is approximately eight miles from the Project area. The Mesa Verde Park, located just south of the Nicholls Warm Springs/Mesa Verde residential area, is approximately 0.4 mile (2,200 feet) from the proposed solar facility. Other recreational opportunities in Blythe include soccer, football, track and volleyball leagues; indoor racquetball; basketball; aerobic activities; weight room; and summer swimming (See California.com 2015). Various nearby privately-owned RV parks and campgrounds also provide recreational facilities, including a boat dock, launch ramp, fishing, swimming, horseshoe pits, wildlife observation, and other active and passive recreation opportunities. The aforementioned facilities are illustrated in Figure 3.14-2.

The Cibola National Wildlife Refuge, administered by the USFWS, can be reached from the California side of the Colorado River, just south of Blythe, or, from the Arizona side, south of Quartzsite. This refuge was established in 1964 as mitigation for dam construction on the Colorado River, and provides important habitat for migratory birds, wintering waterfowl, and resident species. Recreational opportunities include hunting, fishing, wildlife viewing, and a nature trail (USFWS 2014). The refuge is approximately 12 miles from the Project area.

Agricultural areas, including those near the Project area (including the 160-acre inholding within the Project area), may be used for recreational activities; however, these activities are not assumed to occur with high frequency.

3.14.1.3 Public Access

The CDCA Plan and the NECO Plan Amendment to the CDCA Plan state that vehicle access is among the most important recreation issues in the desert. A primary consideration of the recreation program is to ensure that access routes necessary for recreation enjoyment are provided (BLM 2002).

Recreation and motorized travel opportunities are determined, in part, by the CDCA Plan multiple-use class and by OHV area designations. The multiple-use class is based on the sensitivity of resources and kinds of uses for each geographic area. Each of the four multiple-use classes describes a different type and level or degree of use that is permitted within that

particular geographic area (refer to Section 3.10 for a detailed discussion regarding CDCA Plan multiple-use classes). The proposed Project and alternatives would be located in BLM Designated Multiple-Use Class M, in which vehicle access in areas would be allowed on existing routes unless it is determined that use must be further limited.

During the CDCA and NECO planning process, a detailed inventory and designation of routes was developed. This route designation system, along with other land management actions such as setting aside ACECs and the congressional designation of wilderness areas, has resulted in a significant loss of OHV recreation opportunities in eastern Riverside County. Currently, there are no BLM-designated "open" OHV areas in Riverside County.

Under the CDCA Plan, travel routes are classified as Open, Limited, or Closed, with the following definitions:

1) Open Route: Access by motorized vehicles is allowed.
2) Limited Route: Access by motorized vehicles is limited to use by number of vehicles, type of vehicle, time or season, permitted or licensed, or speed limits.
3) Closed Route: Access by motorized vehicles is prohibited except for authorized use.

As required by the CDCA Plan, the NECO Plan Amendment to the CDCA Plan created a detailed inventory of existing routes within the NECO planning area (see Figure 3.14-3). A route has high significance if it provides access to other routes, historical sites, or recreational areas.

In their Assessment of NECO Coordinated Management Plan (CMP) Designated Open Routes (URS 2015, provided in Appendix L), the Applicant has identified several BLM designated Open routes within the Project area. These routes of travel are shown in Figure 3.14-3. Routes within the Project area boundary include three routes that provide access to the 160-acre private inholding within the Project boundary (660862, 660866, and 661501). Because these routes are spur routes, BLM determined that they would be classified as Tier 3 routes under the route definitions specified in DRECP. There are also three routes that provide access to the Mule Mountains (660863, 661092, and 661102). Because these routes are through routes, BLM determined that they would be classified as Tier 2 routes under the route definitions specified in DRECP. On the perimeter of the Project area, there is a maintained dirt route along the powerline on the southeastern Project boundary (660868) and the southwestern Project boundary (660703).

The BLM has no traffic counters or other means to accurately determine use of routes in the immediate Project area. Traffic counters and visitor use data are available in the region, including for the Bradshaw Trail (located 4.2 miles away), and for the Red Cloud Road access to the Wiley Well LTVA and Hauser Geode Beds.

Recreation and vehicle use is generally limited to the cooler months of September through May. Use is nearly non-existent during the summer months. Recreational vehicle use consists of touring in passenger cars, SUVs, motorcycles, and ATVs. Some camping may occur in the vicinity of the site, but most use is of short duration and by local residents. More attractive recreation opportunities occur in areas where BLM has provided facilities such as the Midland LTVA, ACECs, or other scenic, natural, or cultural attractions.

3.15 Social and Economic Setting

This section describes the population and housing, and social and demographic background and existing conditions in areas surrounding the Project site, including the City of Blythe and the broader eastern Riverside County and neighboring Imperial County California and La Paz County, Arizona. Information in this section is based on data obtained from national and regional sources, including the United States Census Bureau, the United States Bureau of Economic Analysis (BEA), the California Department of Finance (DOF) and the California Employment Development Department (EDD).

3.15.1 Environmental Setting

The Project site is located in eastern Riverside County, approximately 10 miles west of the City of Blythe. The site and its immediately adjoining areas are vacant, with no existing population or housing. Areas of potential social and economic effects include Riverside County and the City of Blythe, as well as small nearby communities, in California. In Arizona, the areas of potential social and economic effects include La Paz County and the relatively small communities of Ehrenberg and Quartzite.

The Project includes the construction, operation, maintenance, and decommissioning of a solar energy generating facility. The expected source area for the Project's construction workforce is the primary determinant of the affected social and economic environment associated with the Project. The direct benefits of employment and higher personal incomes will primarily benefit the communities where workers and their families reside, since that would likely be where they spend the majority of their earnings. Workers' spending for goods and services also would have an indirect impact on the communities and economies where that spending occurs.

If there is an insufficient number of suitable workers to staff the Project locally or in the region, then the Project could attract individuals to relocate to the area (either temporarily or permanently), which consequently could result in increased demand for housing and local services. That increased demand could result in decreased availability, or increased prices, for other area residents.

There is little available research and analysis providing guidance for determining the socioeconomic impact area boundaries for power facilities. The widely referenced Electric Power Research Institute (EPRI) analysis (EPRI 1982) is generally cited as showing that workers may commute as much as two hours each direction from their communities rather than relocate. However, the study reports 1.42 hours as the average "construction workers maximum daily commuting time" observed in 12 case studies, and acknowledges a prevalence of weekly commuting for power projects. Large scale utility solar facilities have been constructed in the area in recent years, and anecdotal information from City of Blythe representatives, alternative energy company representatives, and area business leaders have suggested weekly commuting is relatively common among the majority of construction personnel, although some construction personnel stay in the area for multi-week stints if their construction role is of a relatively short duration (e.g., 2-3 weeks). Housing used by weekly or multi-week commuters typically includes hotel rooms near the Project site, recreational vehicle (RV) parks, and/or campgrounds. Construction management and other personnel who are employed in at the site for the entirety

(or large majority) of the construction duration may choose to relocate their families and buy/rent more permanent housing (as opposed to staying at a hotel or an RV park).

For purposes of socioeconomic analysis, and as a conservative assumption recognizing the rural nature of eastern Riverside County, a 2-hour travel radius is used to define the outer limits of the study area. It is likely that most construction workers would come from western Riverside County, which has the largest concentration of construction workers close to the Project site (see Section 3.15), and some of those workers may commute up to 2 hours each way. However, as described in the EPRI report, many workers are also likely to engage in weekly commuting or otherwise temporarily relocate to the Blythe area while working at the Project site.

Figure 3.15-1 depicts a map of areas within 60, 90, and 120 minutes of travel time from the Project site. To simplify the analysis by focusing on the most likely communities of residence for commuters, those cities and communities within 30 minute drive times are specifically included in the analysis, as are all cities and communities with populations over 20,000 individuals within 60 minutes, and all cities with populations over 40,000 individuals within a 120 minute drive time. For San Bernardino, Mohave, and Yuma counties, no cities or communities with populations over 40,000 individuals are within a two-hour drive, so therefore no communities in these counties are specifically discussed. However, the counties are included in some accompanying tables because rural locations and some smaller communities in these counties are within the two-hour commute radius.

Figure 3.15-1 depicts the counties and communities relevant to this analysis along with approximate drive times from the Project site. These cities and communities include Blythe, Cathedral City, Coachella, El Centro, Indio, Mesa Verde, Palm Desert, Palm Springs, Palo Verde, and Ripley, in California; and Buckeye, Cibola, Ehrenberg, and Quartzsite in Arizona.

Economic and employment data are generally available only for counties or metropolitan statistical areas (MSAs) consisting of whole counties. For this analysis, therefore, the socioeconomics regional study area consists of Imperial and Riverside counties (California), and La Paz and Maricopa counties (Arizona), with special attention paid to Riverside and La Paz counties, as they are more likely affected by the Project than the more distant Imperial and Maricopa counties. Where important additional data are available for Riverside-San Bernardino-Ontario MSA, consisting of Riverside and San Bernardino counties, they are used for reference. With respect to housing analysis, data for counties are supplemented with those for cities and communities identified above.

Per guidelines shown in BLM Land Use Planning Handbook, the analysis of a proposed action of this type needs to consider existing socioeconomic conditions and impacts on several geographic scales. As noted above, at the regional scale, this analysis examines data for Imperial, Riverside, Maricopa, and La Paz counties, as well as Riverside-San Bernardino-Ontario MSA, where appropriate. At the local scale, the analysis examines the communities identified above within the 2-hour travel area, although particular consideration is given to the nearest communities of Blythe, California (approximately 10 miles east of the site) and Ehrenburg, Arizona (approximately 13 miles east of the site).

3.15.1.1 Population

Population estimates and recent growth trends for both the regional and local study areas are summarized in Table 3.15-1. Historical data (2000, 2010 U.S. Census data) and 2016 estimates

are shown for the two counties and the states of California and Arizona, for context (Cal DOF 2016a; ADAO 2016a). Projections for future growth (through 2050) are prepared for counties by the respective states (California Department of Finance [Cal DOF 2016b] and Arizona Department of Administration [ADOA 2016b]), but not for cities.

Riverside County is the fourth most populous county in California. The population of Riverside County grew from 1,545,387 in 2000 to 2,347,828 in 2016, a 3.2 percent average annual increase, according to the California Department of Finance (Cal DOF 2016a). Between 2000 and 2016, Riverside County grew at a much faster rate than San Bernardino County (1.6 percent average annual growth), and California as a whole (1.0 percent average annual growth). In Arizona, La Paz County had the lowest average annual growth from 2000 to 2015 (0.5 percent) of all counties within the study area, which includes Maricopa (1.9 percent average annual growth), Mohave (2.0 percent average annual growth), and Yuma (2.0 percent average annual growth) counties (ADOA 2016a).

Population growth in Riverside County is expected to decrease from current rates over the next few decades. The growth rate is projected to be 1.2 percent per year between 2010 and 2020, 1.5 percent per year between 2020 and 2030, and 1.0 percent per year between 2030 and 2050. Growth rates across both states and in La Paz County are expected to decrease through 2050, with a 0.6 percent per year rate between 2030 and 2050 in California and a 1.2 percent per year rate for the same time period in Arizona (Cal DOF 2016b ADOA 2016b). It is possible these projections may be modified as a result of increased or decreased economic activities, as the economic recession that occurred between December 2007 and June 2009 had a substantial effect on population projections in the region.

Table 3.15-2 shows the populations of the affected cities and communities in 2000, 2010, and 2014, along with annual average growth rates from 2000-2014. The cities that experienced the highest rates of population growth between 2000 and 2014 were Buckeye (17.0 percent annually), Coachella (4.8 percent annually) and Indio (3.8 percent annually). The communities of Blythe and Quartzite had average annual growth rates of -0.5 percent and 0.9 percent, respectively.

Table 3.15-1. Population Estimates, Projections, and Average Annual Growth Rates, 2000-2050

Geography	2000	2010	2015/2016[1]	Average Annual Growth Rate 2000-2015/2016[1]	2020 Projection	Average Annual Growth Rate 2010-2020	2030 Projection	Average Annual Growth Rate 2020-2030	Total 2050 Projection	Average Annual Growth Rate 2030-2050
California										
Imperial County	142,361	174,528	185,831	1.9	211,973	2	252,300	1.8	314,346	1.1
Riverside County	1,545,387	2,189,641	2,347,828	3.2	2,478,059	1.2	2,862,915	1.5	3,480,980	1
San Bernardino County	1,710,139	2,035,210	2,139,570	1.6	2,227,066	0.9	2,515,972	1.2	2,997,446	0.9
California	33,873,086	37,253,956	39,255,883	1.0	40,619,346	0.9	44,085,600	0.8	49,779,362	0.6
Arizona										
La Paz County	19,715	20,489	21,183	0.5	21,500	0.5	22,000	0.2	22,900	0.2
Maricopa County	3,072,149	3,817,117	4,076,438	1.9	4,480,900	1.6	5,280,100	1.7	6,698,400	1.2
Mohave County	155,032	200,186	205,716	2	220,700	1	250,600	1.3	310,900	1.1
Yuma County	160,026	195,751	214,991	2	232,800	1.7	269,700	1.5	345,700	1.2
Arizona	5,130,632	6,392,017	6,758,251	1.9	7,346,800	1.4	8,535,900	1.5	10,820,900	1.2

Note:
1- Most recent available population estimates are 2016 for California, and 2015 for Arizona.

Sources: Cal DOF 2016a - http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/
Cal DOF 2016b - http://www.dof.ca.gov/Forecasting/Demographics/Projections/
ADOA 2016a - https://population.az.gov/population-estimates
ADOA 2016b - https://population.az.gov/population-projections

Table 3.15-2. Study Area Communities Population Estimates and Average Annual Growth Rates, 2000-2014

Geography	2000	2010	2014	Average Annual Growth Rate 2000-2014
California				
Blythe	20,465	20,817	18,982	-0.5
Cathedral City	42,647	51,200	52,571	1.5
Coachella	22,724	40,704	43,601	4.8
El Centro	38,025	42,598	44,847	1.2
Indio	49,116	76,036	82,375	3.8
Mesa Verde	no data	1,023	no data	--
Palm Desert	41,155	48,445	50,424	1.5
Palm Springs	42,805	44,552	46,135	0.5
Palo Verde	236	171	no data	--
Ripley	no data	692	no data	--
Arizona				
Buckeye	6,537	50,876	58,795	17
Cibola	172	210	no data	--
Ehrenberg	1,357	1,470	no data	--
Quartzsite	3,354	3,677	3,801	0.9

Sources: http://www.dof.ca.gov/research/demographic/Estimates/
https://population.az.gov/population-estimates
http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml###

3.15.1.2 Housing

Table 3.15-3 presents the housing resources in the study area, including the counties of Imperial, Riverside, Maricopa, and La Paz, and the major communities within the 2-hour drive area. The data are compiled from the U.S. Census American Community Survey, which provides an estimate for each geography for 2013. In 2013, Riverside County had 805,142 total housing units. The total vacancy rate was 15.2 percent, and 2.3 percent of the units were available for rent. La Paz County had a relatively high percentage of vacant housing units (36.4 percent), with 1.8 percent of the total housing units available for rent. Of the communities in the region, Ehrenberg and Cibola had the highest vacancy rates (both at 48.2 percent); however, Cibola had no housing units for rent whereas Ehrenberg had one of the highest percentages of vacant housing units available for rent (5.1 percent). Of the communities closest to the proposed Project site, Blythe had a total vacancy rate of 16.7 percent, with 3.2 percent of housing units available for rent; Mesa Verde had 4.5 percent of all housing units available for rent.

Table 3.15-3. Study Area Housing Characteristics, 2009-2013 Averages

Geography	Total Housing Units	Occupied Housing Units			Vacant Housing Units			
		Total	Owner Occupied	Renter Occupied	Total		For Rent	
California	**13,726,869**	**12,542,460**	**6,939,104**	**5,603,356**	**1,184,409**	**8.60%**	**292,195**	**2.10%**
Blythe	6,087	5,072	2,787	2,285	1,015	16.70%	196	3.20%
Cathedral City	20,925	16,639	10,414	6,225	4,286	20.50%	468	2.20%
Coachella	10,113	9,238	5,955	3,283	875	8.70%	150	1.50%
El Centro	14,225	12,925	6,529	6,396	1,300	9.10%	397	2.80%
Indio	30,171	24,371	15,442	8,929	5,800	19.20%	692	2.30%
Mesa Verde	401	369	286	83	32	8.00%	18	4.50%
Palm Desert	39,534	23,904	15,452	8,452	15,630	39.50%	1,335	3.40%
Palm Springs	35,876	22,650	12,994	9,656	13,226	36.90%	1,216	3.40%
Palo Verde	91	19	0	19	72	79.10%	0	0.00%
Ripley	255	216	46	170	39	15.30%	0	0.00%
Imperial County	56,234	48,099	27,107	20,992	8,135	14.50%	1,226	2.20%
Riverside County	805,142	683,144	454,455	228,689	121,998	15.20%	18,183	2.30%
Arizona	**2,859,768**	**2,370,289**	**1,527,475**	**842,814**	**489,479**	**17.10%**	**95,514**	**3.30%**
Buckeye	18,385	14,703	9,982	4,721	3,682	20.00%	432	2.30%
Cibola	224	116	108	8	108	48.20%	0	0.00%
Ehrenberg	826	428	169	259	398	48.20%	42	5.10%
Quartzsite	3,221	2,142	1,959	183	1,079	33.50%	0	0.00%
La Paz County	16,062	10,221	7,566	2,655	5,841	36.40%	286	1.80%
Maricopa County	1,648,392	1,411,727	882,862	528,865	236,665	14.40%	62,970	3.80%

Source: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

Temporary housing in the Project area includes rental homes, hotel and motel rooms, which are present throughout the study area and are typically concentrated in urban areas or near major transportation facilities. Other types of temporary housing units within the study area that may be used include campgrounds and RV parks.

Rental Homes

As discussed above in Table 3.15-3, vacancy rates are high in the study area, but overall rental rates are much lower. Estimates for 2013 state that 1,015 units in the City of Blythe were vacant and that 196 units were for rent. An additional 42 units in Ehrenberg were vacant for rent. Of the relatively larger communities in the study area, the largest proportion of housing units available

for rental were in the communities of Palm Desert and Palm Springs, although these communities are over 60 minutes away from the proposed Project site.

Hotel and Motel Accommodations

In addition to existing residential units, construction workers and operational workers could use other local lodging facilities as temporary housing. Temporary housing in the form of hotel/motel rooms are typically concentrated in urban areas or near major transportation nodes. For the purposes of this analysis, only those hotels in the communities closest to the proposed action were tabulated under the assumption that construction and operations workers would congregate in this area for ease of commuting.

In the community of Blythe, 21 hotels and motels were identified with an estimated total of 1,040 rooms (HotelGuides 2015; Hotels.com 2015; YP.com 2015). One hotel was identified in Ehrenberg, which had 84 rooms. Three hotels were identified in the nearby community of Quartzsite, with a total of 70 rooms. Airbnb rentals near the community of Blythe numbered five, although only one property was in Blythe and the other four were located in either Ehrenberg or Quartzsite.

The extent that the local motel and hotels within the local study area could provide temporary housing for DQSP construction workers would depend both on current room rates and occupancy rates. Typical room rates for most of the hotel/motels are currently relatively inexpensive during the off-season with quoted rates of $60 to $95 per night (not including tax). Provided operators maintain comparable rates, these local hotel and motel rooms would provide an option for temporary housing, particularly for workers that might be willing to share accommodations.

Considerable additional hotel and motel facilities are available in the other communities located within 1 to 2 hours' drive of the DQSP site, including Indio, Palm Desert, Indian Wells, Rancho Mirage, Desert Hot Springs, Palm Springs, and several other small communities. Another 165 hotels with a total of 14,842 rooms were identified in these communities (Smith Travel Research 2008, as cited in Genesis Solar, LLC 2009).

Although eastern Coachella Valley (Palm Desert, Indio, and points east) has a substantial number of hotel and motel accommodations, the attractiveness of these resources for construction workers is low, due to the great distance of nearly 2 hours of travel time from the Project site. Furthermore, given their location near business and recreation centers, it is likely that these hotels and motels would have higher room rates and, therefore, would not be as suitable temporary housing for DQSP workers.

Campgrounds and RV Parks

In addition, other housing opportunities are available in the form of RV facilities, mobile home sites, and campgrounds. Under some circumstances, these types of facilities could be usable by DQSP construction workers as temporary housing. Generally their lower costs for overnight use could make them attractive as a potential temporary housing resource. Particularly for construction workers who may own their own RV or trailers, RV parks with utility hook-ups and other amenities could serve as a longer-term rental for workers who prefer a weekly commute.

There are at least 11 RV parks located in the vicinity of Blythe (including Ehrenberg). In Blythe, at least seven RV parks are present, with a combined total of approximately 1,000 spaces. At

least four RV parks are located in Ehrenberg, with a combined total of approximately 400 spaces. (RV Park Reviews 2015; Google 2015). RV parks in Blythe and Ehrenberg tend to be located along the Colorado River and receive higher levels of use during the summer. Research on small sample of these RV parks suggests that, while they have a large number of spaces, many are occupied by year-round residents or are privately owned and, therefore, would not be available for use by construction workers (Genesis Solar, LLC 2009). Additional RV parks are located in Quartzsite, Arizona, approximately 20 miles east of Blythe. The Quartzsite Chamber of Commerce states there are more than 70 campgrounds in the vicinity of the community that are typically occupied between October and March, with visitors attracted to the gem, mineral, and swap meet shows which are popular tourist attractions in the area (Quartzsite Business Chamber of Commerce 2016).

BLM operates two campgrounds in the general vicinity of the local study area: Wiley's Well Campground and Coon Hollow Campground, both located south of I-10 on Wiley's Well Road within the Mule Mountain LTVA. Both are year-round facilities with campsites, picnic tables, grills, shade armadas, and handicapped-accessible vault toilets (BLM 2011b). Except for "special areas" with specific camping regulations, vehicle camping is allowed anywhere on BLM-administered land within 300 feet of any posted Open Route. However, there are no facilities in these locations, and there is a 14-day limit for camping in any one location. After 14 days, campers wishing to stay in the area longer are required to move 25 miles from their original camp site. Long-term camping is available by permit in LTVAs on BLM lands between September 15 and April 15 (from April 16 to September 14, there is a 14-day limit within any 28-day period). Between the dates of April 15 to September 15, there is no trash pick-up and toilets are closed. There are two LTVAs located in the vicinity of Blythe and the Project site: Mule Mountain, within which camping is only allowed at designated sites within the Wiley's Well and Coon Hollow campgrounds, and Midland, located north of the City of Blythe. BLM also operates another LTVA within the study area at La Posa, south of I-10 near Quartzsite, Arizona (BLM 2007).

3.15.1.3 Economic Conditions

Study area employment statistics by industry sector and county for 2009-2013 are summarized in Table 3.15-4. Educational and health services industries are the largest employers in Riverside County. This sector accounts of over 20 percent of the total jobs in Riverside County. Additional industries with high proportions of total employees in the County include retail trade; arts, entertainment, recreation, accommodation, and food service; and professional and business services. Educational and health services industries are also the largest employers in La Paz County. This sector accounts for nearly 18 percent of the total jobs in La Paz County. Additional industries with high proportions of total employees in the County include government; agriculture, forestry, fishing, and hunting, and arts, entertainment, recreation, accommodation, and food service.

In Riverside and La Paz counties, the construction industries account for 8.2 percent and 4.5 percent of employment, respectively. In Imperial and Maricopa counties, the construction industries account for 5.1 and 6.7 percent of employment, respectively. The sector with the lowest number of persons employed is mining, quarrying, and oil and gas extraction, with approximately 4,000 employees across all four counties.

Table 3.15-4. Employment by Industry Group, 2009-2013 Averages

Industry Group	Imperial County		Riverside County		California		La Paz County		Maricopa County		Arizona	
	Total	Percent	Total	Percent	Total	Percent	Total	Percent	Total	Percent	Total	Percent
Agriculture, forestry, fishing and hunting	5,252	9	13,032	1.5	358,412	2.2	1,034	15.6	7,696	0.4	25,427	0.9
Mining, quarrying, and oil and gas extraction	289	0.5	690	0.1	29,099	0.2	13	0.2	3,050	0.2	14,968	0.5
Construction	2,994	5.1	72,017	8.2	996,922	6	298	4.5	116,069	6.7	181,102	6.7
Manufacturing	3,228	5.5	81,173	9.3	1,659,850	10	186	2.8	139,514	8	204,219	7.5
Wholesale Trade	1,685	2.9	29,676	3.4	525,795	3.2	152	2.3	47,134	2.7	66,440	2.4
Retail Trade	7,600	13.1	114,208	13	1,850,696	11.1	751	11.3	211,807	12.2	332,224	12.2
Transportation, Warehousing, and Utilities	4,023	6.9	47,094	5.4	773,145	4.6	345	5.2	88,809	5.1	133,643	4.9
Information	724	1.2	14,384	1.6	471,345	2.8	17	0.3	34,154	2	49,891	1.8
Financial Activities	2,345	4	47,236	5.4	1,068,711	6.4	284	4.3	165,175	9.5	215,268	7.9
Professional and Business Services	3,392	5.8	87,990	10	2,099,358	12.6	224	3.4	222,834	12.8	316,142	11.6
Educational and Health Services	14,017	24.1	181,003	20.6	3,497,445	21	1,168	17.6	367,711	21.2	605,203	22.2
Arts, Entertainment, Recreation, Accommodation, and Food Service	3,887	6.7	96,865	11	1,628,085	9.8	783	11.8	170,914	9.9	290,762	10.7
All Other Services	2,306	4	45,966	5.2	893,566	5.4	336	5.1	83,247	4.8	131,979	4.8
Government	6,427	11	45,696	5.2	783,425	4.7	1,044	15.7	76,527	4.4	154,598	5.7
Total	58,169	100	877,030	100	16,635,854	100	6,635	100	1,734,641	100	2,721,866	100

Source: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

Table 3.15-5 presents the total projected new jobs by occupation for Riverside and San Bernardino counties. For the purposes of employment data tabulation, the California Employment Development Department (EDD) groups Riverside and San Bernardino counties as one statistical area; hence, they are presented in Table 3.15-4 together. Data for projected jobs were not available for Arizona counties; however, long-term industry employment projections are available for the state. The highest number of new jobs projected in Riverside and San Bernardino counties is expected to be in retail sales. Job growth is also anticipated for laborers and material movers, food preparers, and cashiers. The projected job growth for construction laborers was 8,510 from 2012-2022. In Arizona, the construction sector is forecast to gain 60,100 jobs, with the largest employment gains expected in the "specialty trades" sub-sectors (ADOA 2015). Table 3.15-6 presents the percentage change of projected new jobs for Riverside and San Bernardino counties for the same period. Many occupations with high rates of job growth (by percentage) are related to construction, including brick masons and block masons, iron workers, and cement masons.

Table 3.15-5. Occupational Employment Projections: Top 10 Occupations by Total Increased Number, Riverside and San Bernardino Counties, 2012-2022

Occupation	Number of New Jobs Projected
Retail Salespersons	24,590
Laborers and Freight, Stock, and Material Movers, Hand	21,060
Combined Food Preparation and Serving Workers, Including Fast Food	20,750
Cashiers	20,200
Personal Care Aides	17,980
Waiters and Waitresses	13,700
Heavy and Tractor-Trailer Truck Drivers	9,950
Office Clerks, General	9,250
Stock Clerks and Order Fillers	8,830
Construction Laborers	8,510

Source: http://www.labormarketinfo.edd.ca.gov/file/occproj/rive$occmost.xlsx

Table 3.15-6. Occupational Employment Projections: Top 10 Occupations by Percent Increased Change, Riverside and San Bernardino Counties, 2012-2022

Occupation	Estimated Employment 2012	Projected Employment 2022	Percent Change	Annual Average Change
Brick masons and Block masons	710	1,420	100	0.1
Helpers – Brick masons, Block masons, Stone masons, and Tile and Marble Setters	460	890	93.5	0.09
Reinforcing Iron and Rebar Workers	480	800	66.7	0.07
Cement Masons and Concrete Finishers	1,960	3,220	64.3	0.06
Fence Erectors	570	930	63.2	0.06
Tile and Marble Setters	1,140	1,840	61.4	0.06
Cost Estimators	2,100	3,350	59.5	0.06
Painters, Construction and Maintenance	3,440	5,450	58.4	0.06

Table 3.15-6. Occupational Employment Projections: Top 10 Occupations by Percent Increased Change, Riverside and San Bernardino Counties, 2012-2022

Occupation	Estimated Employment 2012	Projected Employment 2022	Percent Change	Annual Average Change
Personal Care Aides	27,620	43,630	58	0.06
Roofers	1,280	2,020	57.8	0.06

Source: http://www.labormarketinfo.edd.ca.gov/file/occproj/rive$occfastest.xlsx

Table 3.15-7 presents county employment figures for those skilled workers (by craft) likely required for construction and operation of the Project. Employment figures for 2012 are provided, as well as employment projections for the selected occupations for 2022. As stated above, the EDD groups Riverside and San Bernardino into one statistical area for data presentation purposes; thus, these two counties are presented together in Table 3.15-7. As of 2012, there were relatively high numbers of skilled workers in Riverside and San Bernardino County, including construction workers (49,660), maintenance and repair workers (48,730), and construction laborers (12,310). Relevant specialized positions were generally fewer in number for Riverside and San Bernardino counties, including paving, surfacing, and tamping equipment operators, power plant operators, and metal/plastic workers. Employment figures for all occupations presented are anticipated to either remain constant or grow by 2022. The two occupations with the largest anticipated growth (by absolute number) are construction workers (24,210 new positions) and maintenance/repair workers (10,870 new positions); the two occupations with the largest anticipated growth by percentage are construction helpers (66.5 percent increase) and cement masons (64.3 percent increase).

As of September 2015, Riverside County had a labor force of 1,016,700 workers, of which 952,800 were employed. In Arizona, La Paz County had a labor force of 8,011 workers, of which 7,374 were employed. As presented in Table 3.15-8, the highest unemployment rate in study area communities was in Ripley (23.6 percent), followed by Mesa Verde (22.4 percent). Of the larger communities in the study area, the communities with the highest rates of unemployment were El Centro (22.0 percent) and Coachella (9.7 percent). The community of Blythe had 6,600 workers in its labor force, of whom 6,200 were employed, for an unemployment rate of 7.0 percent. Per capita income was highest in Palm Desert (over $40,000) and was lowest in Ripley (almost $8,800). In the nearby communities of Blythe and Ehrenberg, the per capita income estimates were $16,329 and $22,205, respectively.

While no municipal figures exist for projected unemployment, a recently published report by the U.S. Federal Reserve projected that the national unemployment rate will decrease to 4.8 percent in 2016 and remain under 5.0 percent through 2018 (U.S. Federal Reserve 2015).

3.15.1.4 Government Tax Revenues

A summary of Riverside County's revenues and expenditures for fiscal years (FY) 2012-13 and 2013-14 is provided in Table 3.15-9. As the Project would be constructed in unincorporated Riverside County, it would be the local agency receiving most of the direct fiscal impacts from the DQSP in the form of additional expenses or revenues.

Table 3.15-7. Occupational Employment Projections: Project-Relevant Occupations, Riverside and San Bernardino Counties, 2012-2022

Occupation	Annual Average Employment		Employment Change			Average Annual Job Openings		
	2012	2022	Number	Percent (2012-2022)	Annual Average Percent Change	New Jobs	Net Replacements	Total
Construction Managers	4,040	5,380	1,340	33.20%	3.30%	134	64	198
Construction Workers	49,660	73,870	24,210	48.80%	4.90%	2,422	828	3,250
Carpenters	9,610	14,030	4,420	46.00%	4.60%	442	118	560
Cement Masons and Concrete Finishers	1,960	3,220	1,260	64.30%	6.40%	126	23	149
Construction Laborers	12,310	18,180	5,870	47.70%	4.80%	587	264	851
Paving, Surfacing, and Tamping Equipment Operators	750	900	150	20.00%	2.00%	14	11	25
Operating Engineers and Other Construction Equipment Operators	2,990	3,920	930	31.10%	3.10%	93	66	159
Drywall and Ceiling Tile Installers	2,320	3,630	1,310	56.50%	5.60%	131	22	153
Electricians	3,920	5,590	1,670	42.60%	4.30%	167	74	241
Painters, Construction and Maintenance	3,440	5,450	2,010	58.40%	5.80%	201	52	253
Plumber, Pipefitters, and Steamfitters	2,520	3,620	1,100	43.70%	4.40%	110	31	141
Metal Workers and Plastic Workers	510	540	30	5.90%	0.60%	3	6	9
Helpers - Construction Trades	1,820	3,030	1,210	66.50%	6.60%	122	28	150
Maintenance and Repair Workers, General	48,730	59,600	10,870	22.30%	2.20%	1,090	1,140	2,230
Welders, Cutters, Solderers, and Brazers	2,590	2,960	370	14.30%	1.40%	38	63	101
Plant and System Operators	2,090	2,130	40	1.90%	0.20%	9	71	80
Power Plant Operators	510	520	10	2.00%	0.20%	0	16	16
Architects, Surveyors, and Cartographers	910	1,140	230	25.30%	2.50%	24	20	44
Engineering Managers	1,020	1,170	150	14.70%	1.50%	15	25	40
Supervisors of Construction and Extraction Workers	4,280	6,350	2,070	48.40%	4.80%	207	46	253
Machinists	3,370	3,840	470	13.90%	1.40%	48	77	125

Source: http://www.labormarketinfo.edd.ca.gov/file/occproj/rive$occproj.xlsx

Table 3.15-8. Study Area Communities Employment Statistics and Per Capita Income, September 2015

Geography	Civilian Labor Force	Total Employment	Number Unemployed	Unemployment Rate	Per Capita Income*
California					
Blythe	6,600	6,200	500	7.00%	$16,329
Cathedral City	25,000	23,800	1,300	5.10%	$19,815
Coachella	18,000	16,200	1,700	9.70%	$11,874
El Centro	21,500	16,800	4,700	22.00%	$18,877
Indio	36,400	33,900	2,500	6.80%	$20,607
Mesa Verde*	490	380	110	22.40%	$12,541
Palm Desert	22,900	21,900	1,000	4.50%	$40,266
Palm Springs	21,700	20,600	1,100	5.10%	$35,578
Palo Verde*	19	19	0	0.00%	--
Ripley*	216	165	51	23.60%	$8,765
Imperial County	79,700	60,800	18,800	23.60%	$16,763
Riverside County	1,016,700	953,000	63,700	6.30%	$23,591
Arizona					
Buckeye	22,993	21,558	1,435	6.20%	$20,318
Cibola*	78	73	5	6.40%	$26,722
Ehrenberg*	430	380	50	11.60%	$22,205
Quartzsite*	1,011	811	200	19.80%	$24,514
La Paz County	7,712	7,079	633	8.20%	$22,200
Maricopa County	2,013,838	1,905,798	108,040	5.40%	$27,256

Sources: *taken from FactFinder 2009-2013 American Community Survey 5-Year Estimates
**taken from azstats.gov 2014
http://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis/areaselection.asp?tablename=labforce
http://azstats.gov/laus-data-query-tool/
Arizona towns come from: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml
Per Capita income comes from: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

Table 3.15-9. Riverside County Revenues and Expenses, 2012-2015

Category	2012-2013	2013-2014	2014-2015 (Adopted)
Revenues			
Taxes	301,659,506	314,135,999	314,057,747
Licenses, Permits, and Franchises	18,798,544	20,376,429	21,224,480
Fines, Forfeitures, and Penalties	85,583,933	81,488,872	72,631,740
Revenues from Use of Money and Property	16,530,929	24,977,255	19,029,344
Intergovernmental Revenues	1,610,104,565	1,699,347,379	1,921,670,146
Charges for Current Services	585,939,607	608,667,661	781,519,984
Other In-Lieu and other Governments	6,369,710	11,375,829	12,277,423
Other Revenue	248,260,280	241,022,153	247,002,743
Total	2,873,247,074	3,001,391,577	3,389,413,607
Expenditures			
General Government	470,009,756	331,627,307	413,715,912
Public Protection	1,128,003,047	1,204,077,243	1,260,671,787
Public Ways and Facilities	191,617,433	189,569,440	239,581,311
Health and Sanitation	403,013,005	429,370,012	485,261,035
Public Assistance	814,977,120	868,422,787	975,714,648
Education	23,120,303	21,909,602	22,178,862
Recreation and Cultural Services	824,582	758,657	351,072
Debt Service	34,626,943	39,855,533	43,779,831
Total	3,066,192,189	3,085,590,581	3,441,254,458

Source: http://countyofriverside.us/Portals/0/Government/Budget%20Information/2014-2015%20Adopted%20Budget/FY15AdoptedBudgetWeb.pdf

For FY 2013-14, new revenues for governmental funds (General Fund and other funds for general governmental functions, excluding proprietary and special district funds) of Riverside County totaled approximately $3.00 billion, and expenditures totaled $3.09 billion (Riverside County 2015d). The excess of expenditures over revenues was funded through the use of reserves and designations from previous fiscal years. The largest sources of revenue are intergovernmental revenues (state and Federal; $1.70 billion), charges for current services ($0.61 billion), and taxes (property, sales, and other taxes; $0.31 billion). The largest expenditure categories are public protection (sheriff, corrections, courts, and fire protection; $1.20 billion) and public assistance ($0.87 billion).

Without access to property taxation on most components of a new solar energy project, the County must rely principally on sales tax revenues on construction materials and supplies to fund expenditures for public services related to the Project. Riverside County's key expenditures were on public assistance, public safety, and health. The County acknowledges that the economic slowdown may result in revenues lower than past projections which may lead to cutbacks in services.

3.15.1.5 Stakeholders

Affected Groups and Attitudes

This section discusses some groups of individuals who could be affected by the Project, based on BLM's previous experience during the environmental review processes for other utility-scale solar projects in eastern Riverside County. Social effects to these groups and other stakeholders are discussed under Section 4.15, *Social and Economic Effects*.

Identification of these groups does not imply that other stakeholders may not be affected by the Project or are outside of the social and environmental review process. Discussion of the affected groups is a means of highlighting and facilitating review of issues of potential significance for those stakeholders who have a particular local or regional relationship to the Project site or Proposed Action.

Blythe Area Chamber of Commerce

The Blythe Area Chamber of Commerce provides a forum for local businesses and residents on important community issues. The Chamber of Commerce maintains a directory of all the businesses in Blythe and promotes the city's business economy. The purpose of the Blythe Area Chamber of Commerce is to encourage and facilitate activities that improve the economic viability of this community, provide a forum for guidance and support, provide opportunities to inform, and seek funds necessary for implementing compatible activities that would improve this agricultural community. The Chamber of Commerce has supported other utility-scale solar projects in the Blythe area and would likely support the Project.

Environmental Groups

Several national and local groups, including the Sierra Club, Wilderness Society, Natural Resources Defense Council, Defenders of Wildlife, Center for Biological Diversity, and Western Watersheds Project, have expressed concerns about the siting criteria used for renewable energy projects proposed for development in sensitive biological resource areas. Environmental groups also have concerns regarding impacts on wildlife movement corridors, impacts on special status species associated with the implementation of solar panels (e.g., shading effects on species), climate change/GHG emission-related impacts on plants and wildlife, and impacts on desert hydrology and landscapes.

Local Private Land Owners and Residents

Although the Project would be developed mostly on BLM land, a portion of the solar plant would be located on private land surrounded by BLM land. This land is currently vacant, and no comments in opposition to the Project have been received from local land owners during the scoping process for this Project.

Native American Tribes and Tribal Representatives

Native American tribal representatives have commented on the development of other large-scale solar projects in the area regarding the inadvertent discovery of cultural resources and the development of desert landscapes that contain evidence of their ancestors' use. Common concerns include the disturbance of cultural resources, the final disposition of recovered cultural

materials, and the monitoring of ground disturbing activities during construction phases. Tribes in the area have successfully litigated against industrial developments in the region.

Project Workers and Suppliers to the Renewable Energy Industry

The DQSP has the potential to affect both local and non-local labor force from surrounding areas in Riverside and La Paz counties. Construction and operation of the Project would require both temporary and long-term workers, which would increase demand for labor, and would present an opportunity for the sale of materials and supplies by firms in the renewable energy industry.

Recreational Users

Recreational users include OHV users, hikers, campers, and wildlife viewing enthusiasts. The recreational user group has a deep appreciation for the natural desert landscape, and their social attitudes are participatory and protective of this resource. This group is concerned with the indirect impacts associated with the displacement of recreational lands by solar energy facilities, including the cumulative loss of land available for OHV recreational uses.

3.16 Special Designations and Lands with Wilderness Characteristics

This section describes special designations and lands with wilderness characteristics in the vicinity of the proposed Project (Figure 3.16-1). Most special areas are either designated by an Act of Congress or by Presidential Proclamation, or are created under BLM administrative procedures.

BLM's National Landscape Conservation System (NLCS) designations include: National Monuments, National Conservation Areas, Wilderness Areas, Wilderness Study Areas, National Scenic and Historic Trails, Wild and Scenic Rivers, Outstanding Natural Areas, Forest Reserves, or any other special designations lands described in the Omnibus Public Lands Management Act of 2009 (PL 111-11 §2002(b)). Other BLM special designations include Areas of Critical Environmental Concern (ACECs), Cooperative Management and Protection Areas, Scenic and Back Country Byways, watchable wildlife viewing sites, wild horse and burro ranges, and other special designations identified in BLM Handbook H-1601 – Land Use Planning Handbook, Chapter III (BLM 2005).

Land use plan and management direction for such designations must comply with the purposes and objectives of the proclamation or act of Congress regardless of any conflicts with the FLPMA's multiple-use mandate (BLM 2009).

The following discussion explains the relationship between the Project and the existing special designations within the vicinity of the Project, which include Wilderness Areas, ACECs, lands with wilderness characteristics, and a Back Country Byway.

3.16.1 Environmental Setting

3.16.1.1 Regional Setting

The Project would be located within the Palo Verde Mesa of the Sonoran Desert region of southeastern California, an alluvial-filled basin that is bounded by the Mojave Desert to the north and by the McCoy Mountains, Little Maria Mountains, and Big Maria Mountains to the west, northwest, and northeast, respectively, extending southwest to the Palo Verde Mountains. The Palo Verde Mesa is bounded by the Palo Verde Valley to the east, which is generally formed by the flood plain deposits of the Colorado River.

Special designations within this regional setting, as shown in Figure 3.16-1, include seven components of the National Wilderness Preservation System: Palen-McCoy Wilderness (approximately 18 miles northwest), Rice Valley Wilderness (approximately 19 miles north), Big Maria Mountains Wilderness (approximately 12 miles northeast), Palo Verde Mountains Wilderness (approximately 10 miles south), Trigo Mountain Wilderness (approximately 19 miles southeast), Chuckwalla Mountains Wilderness (approximately 19 miles west), and Little Chuckwalla Mountains Wilderness (approximately 11 miles southwest).

Five ACECs have been administratively designated within the vicinity of the Project: Mule Mountains ACEC (approximately one mile southwest), Chuckwalla Valley Dune Thicket ACEC (approximately seven miles west), Palen Dry Lake ACEC (approximately 19 miles northwest), Chuckwalla Desert Wildlife Management Area ACEC (approximately 13 miles southwest), and Big Marias ACEC (approximately 14 miles northeast).

The eastern terminus of the Bradshaw Trail Back Country Byway is located approximately 4 miles south of the Project, and traverses westerly for approximately 70 miles.

There are also two LTVAs within the Project vicinity; please see Section 3.14, *Recreation and Public Access*, for a detailed discussion of these two designated areas.

3.16.1.2 Project Setting

No Congressional or Administrative special designations, Wilderness Areas, or Wilderness Study Areas exist at or are immediately adjacent to the Project. In addition, no lands with wilderness characteristics exist on or adjacent to the Project site.

3.16.1.3 Wilderness Characteristics Review

Pursuant to §201(a) of the FLPMA, the BLM is required to maintain an inventory of all public lands and their resource and other values, which includes wilderness characteristics. All Public Lands within the California Desert District were analyzed in the 1979 wilderness inventory process to determine whether they possessed appropriate wilderness characteristics of size, naturalness, outstanding opportunities for solitude or primitive and unconfined type of recreation and other supplemental values.

The land area associated with the Project site is included within two different units inventoried for wilderness characteristics. These two units, unique identifier CDCA 1351-1 and CDCA 1351A-1, were found to have no wilderness characteristics in the 1979 inventory, because neither unit included 5,000 acres of contiguous land area. Both units were re-inventoried in 2016 and again found to have no wilderness characteristics. The nearest land found to have wilderness characteristics is located on the eastern end of the Little Chuckwalla Mountains Wilderness Area, approximately 10 miles southwest of the Project site.

3.16.1.4 Designated Wilderness Areas

Designated Wilderness Areas in the vicinity of the Project are shown on Figure 3.16-1. Wilderness areas are congressionally designated and are managed pursuant to the Wilderness Act of 1964 (PL 88-577; 16 USC 1131-1136), and/or the specific legislation designating the wilderness area. In addition to the Wilderness Act of 1964, wilderness areas in the CDCA were designated and are managed through the CDPA of 1994 (PL 103-433) and the Omnibus Public Lands Management Act of 2009 (PL 111-11). A designated wilderness area is defined as having four primary characteristics, including the following:

1. Generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;
2. Has outstanding opportunities for solitude or a primitive and unconfined type of recreation;
3. Has at least 5,000 acres of land or is of sufficient size to make practicable its preservation and use in an unimpaired condition; and
4. May also contain ecological, geological or other features of scientific, educational, scenic, or historical value.

Six of the seven wilderness areas located in the vicinity of the Project site and were designated by Congress through enactment of the CDPA (16 USC §§ 410aaa et seq.) and formally incorporated in the CDCA Plan through the NECO Plan Amendment to the CDCA Plan (BLM 2002a). The Trigo Mountain Wilderness was designated under the Arizona Desert Wilderness Act of 1990.

According to the CDPA §103(d), "The Congress does not intend for the designation of wilderness areas in §102 of this title to lead to the creation of protective perimeters or buffer zones around any such wilderness area. The fact that non-wilderness activities or uses can be seen or heard from areas within a wilderness area shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area," (Govtrack.us 2015).

The Wilderness Areas in the vicinity of the Project site are:

- The Palen-McCoy Wilderness Area, located approximately 7 miles northwest of the Project area, encompasses approximately 236,488 acres (BLM 2014a).
- The Big Maria Mountains Wilderness, located approximately 10 miles northeast of the Project area, is 45,384 acres in size (BLM 2014b).
- The Rice Valley Wilderness, located approximately 25 miles northwest of the Project area, is 41,777 acres in size (BLM 2014c).
- The Little Chuckwalla Mountains Wilderness, located approximately 10 miles southwest of the Project area, is 28,034 acres in size (BLM 2014d).
- The Chuckwalla Mountains Wilderness, located approximately 20 miles west of the Project area, is 99,548 acres in size (BLM 2014e).
- The Palo Verde Mountains Wilderness, located approximately 10 miles south of the Project area, is 30,605 acres in size (BLM 2014f).
- The Trigo Mountain Wilderness, located approximately 19 miles south of the Project area, is 30,300 acres in size (BLM 2014g).

Users of these wilderness areas are seeking opportunities to experience naturalness, solitude, and unconfined recreation. The areas have no developments other than sparse trails and any routes that have not been reclaimed since the wilderness designation. Little data exist on the amounts, types, and trends of visitor use experiences such as camping, hiking, or sightseeing. Recreation uses are discussed in Section 3.14, *Recreation and Public Access,* and include hunting, fishing, and non-commercial trapping. Pets are allowed, and the use of horses is permitted. Camping is permitted, but is limited to a period of 14 days. After 14 days, campers must relocate at least 25 miles from the previous site (BLM 2014a-g).

Motorized-vehicle access is prohibited in wilderness areas except as specifically provided for in the Wilderness Act and by reference in subsequent wilderness legislation (i.e., where access is required to private property, and where necessary to meet minimum requirements for the administration of the area for the purpose of the Act, including measures required in emergencies involving the health and safety of persons within the area).

3.16.1.5 Areas of Critical Environmental Concern

ACECs in the vicinity of the site are shown on Figure 3.16-1. ACECs are BLM-specific, administratively designated areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes; or to protect life and safety from natural hazards (FLPMA, 43 USC 1702(a); 43 CFR 1601.0-5(a)). By itself, the designation does not automatically prohibit or restrict uses in the area; instead, it provides a record of significant values that must be accommodated when BLM considers future management actions and land use proposals.

There are five ACECs located in the vicinity of the site. The closest ACEC to the Project site is the 4,092-acre Mule Mountains ACEC, located approximately one mile southwest of the site. This ACEC was established to manage cultural resources, with the goal of protecting cultural values while providing for compatible public uses.

The four other ACECs range in distance from 7 to 19 miles from the Project site. The 2,273-acre Chuckwalla Valley Dune Thicket ACEC is located approximately 7 miles west of the site. This ACEC is managed as Multiple Use Class M, for wildlife habitat, specifically that of the Mojave desert tortoise. Similarly, the Palen Dry Lake ACEC is located approximately 19 miles northwest of the site and was established to protect prehistoric values (BLM 1980). The Chuckwalla Desert Wildlife Management Area ACEC is located approximately 13 miles southwest of the Project site and was established to protect Mojave desert tortoise and significant natural resources (BLM 2002a). The Big Marias ACEC, located in Arizona, is approximately 14 miles northeast of the site and was established to protect prehistoric archaeological features, including a high concentration of internationally significant intaglio features, and sensitive plant species (BLM 2010b). Recreation uses allowed in ACECs are discussed in Section 3.14, *Recreation and Public Access*.

3.16.1.6 Back Country Byways

The BLM-administered portion of the Bradshaw Trail is a 70-mile Back Country Byway that begins about 35 miles southeast of Indio, California and ends about 14 miles southwest of Blythe (BLM 2010a; BLM 2012e). The trail was the first road through Riverside County, created by William Bradshaw in 1862 as an overland stage route beginning in San Bernardino, California, and ending at Ehrenberg, Arizona. The trail was used extensively between 1862 and 1877 to transport miners and passengers. The trail is a graded dirt road that traverses mostly public land between the Chuckwalla Mountains and the Chocolate Mountain Aerial Gunnery Range. Recreational opportunities on the trail primarily include camping and OHV use (BLM 2012e; Anderson 2015).

3.17 Transportation and Traffic

This section describes the environmental setting in regard to transportation and traffic for the proposed Project and alternatives. The information in this section is based on the *Traffic Impact Analysis for the Desert Quartzite Solar Project* prepared by URS Corporation 2016 (Appendix K).

Because the Project site is located in a remote area, all materials and personnel would be brought to the site from surrounding communities within Riverside County, such as Blythe and Indio, as well as regions of Los Angeles County and towns in Arizona, such as Quartzite, Ehrenberg, and Cibola. Consequently, it is expected that all DQSP-related traffic would utilize Interstate 10 (I-10) for regional travel, and local roads between I-10 and the site for site access. Therefore, this analysis of transportation and traffic focuses on the local roads and I-10 in the vicinity of the Project site.

3.17.1 Environmental Setting

The Project area would be located in Riverside County approximately 2.75 miles southwest of the City of Blythe and 37 miles east of Desert Center (refer to Figure 1-1). The Project would be located south of I-10 and west of State Route (SR) 78. It is anticipated that most workers would be drawn from the Blythe/Palo Verde Valley region and the Desert Center region, with a smaller portion drawn from the Imperial Valley or eastern Riverside County region. Workers and delivery trucks would access the site using the SR-78 (Neighbours Boulevard) off-ramp from I-10. The roadways and intersections that would be used for the Project, and for which potential impacts have been evaluated, are shown in Figure 3.17-1. It is anticipated that the following four intersections within the traffic study area are likely to experience an increase in traffic volume during construction, and thus were selected for capacity evaluation:

- Intersection 1 – SR-78 (Neighbours Boulevard) and I-10 Westbound Ramps
- Intersection 2 – SR-78 (Neighbours Boulevard) and I-10 Eastbound Ramps
- Intersection 3 – SR-78 (Neighbours Boulevard) and 14th Avenue
- Intersection 4 – SR-78 (Neighbours Boulevard) and 16th Avenue

Similarly, the following four roadway segments were also selected for capacity evaluation:

- I-10 West of SR-78
- I-10 East of SR-78
- SR-78 South of I-10
- 16th Street West of SR-78

3.17.1.1 Regional and Local Roadway Facilities

In the Project area, I-10 is classified as a freeway with two lanes in each direction. Access to the site from I-10 is via the SR-78 (Neighbours Boulevard) interchange (Exit 236). Local access to the Project site is from 16th Avenue/Seeley Avenue.

3.17.1.2 Existing Traffic Volumes and Levels of Service

The level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. LOS indicators for the highway and roadway system are based on specific characteristics of traffic flow on designated sections of roadway during a typical day. For mainline freeway and roadway segments, these include overall traffic volume, speed, and density.

Several physical and operational characteristics of the roadway, such as lane configuration and flow speed (i.e., the typical speed along a roadway segment) are used to determine the vehicular capacity of the roadway segment. When these two sets of data are compared, a volume-to-capacity ratio is calculated. These factors then are converted to a letter grade identifying operating conditions and expressed as LOS A through F. The *Highway Capacity Manual 2000*, published by the Transportation Research Board, includes six levels of service for roadways or intersections ranging from LOS A (best operating conditions characterized by free-flow traffic, low volumes, and little or no restrictions on maneuverability) to LOS F (worst operating conditions characterized by forced traffic flow with high traffic densities, slow travel speeds, and often stop-and-go conditions) (Transportation Research Board 2000).

Intersections

Table 3.17-1 shows the relationship between LOS and the performance measures for signalized and unsignalized intersections, and lists the *Highway Capacity Manual 2000* delay criteria for signalized intersections.

Table 3.17-1. Intersection Level of Service Definitions

Level of Service	Signalized Intersection Control Delay (in seconds/vehicle)	Unsignalized Intersection Control Delay (in seconds/vehicle)
A	0 – 10	0 – 10
B	10.1 – 20	10.1 – 15
C	20.1 – 35	15.1 – 25
D	35.1 – 55	25.1 – 35
E	55.1 – 80	35.1 – 50
F	80.1 or more	50.1 or more

Source: National Research Council 2000, Exhibits 16.2 and 17-2.

Traffic data were collected by the Applicant during typical weekdays in July 2011 for the two SR-78 and I-10 ramp intersections and in September 2014 for the other two SR-78 intersections (14th and 16th Avenues). The traffic counts include morning (7 to 9 am) and afternoon (4 to 6 pm) peak hour study intersection counts. The traffic counts collected in 2011 for the two SR-78 (Neighbours Boulevard) and I-10 ramp intersections have been updated to 2015 conditions (based on 2 percent annual growth).

Table 3.17-2 shows the intersection LOS and average delay results for the four key intersections under existing conditions, and in the peak year condition. All four intersections are unsignalized and are currently operating at LOS A.

Table 3.17-2. Peak Hour Intersection Conditions

Intersection	Existing		Peak Year	
	Average Delay (seconds/vehicle)	LOS	Average Delay (seconds/vehicle)	LOS
Morning (AM) Peak Hour				
1. SR-78 (Neighbours Blvd)/I-10 Westbound Ramps	9.1	A	9.2	A
2. SR-78 (Neighbours Blvd)/I-10 Eastbound Ramps	9.1	A	9.1	A
3. SR-78 (Neighbours Blvd)/14th Avenue	9.4	A	9.4	A
4. SR-78 (Neighbours Blvd)/16th Avenue	9.7	A	9.7	A
Afternoon (PM) Peak Hour				
1. SR-78 (Neighbours Blvd)/I-10 Westbound Ramps	9.2	A	9.2	A
2. SR-78 (Neighbours Blvd)/I-10 Eastbound Ramps	9.4	A	9.4	A
3. SR-78 (Neighbours Blvd)/14th Avenue	9.7	A	9.9	A
4. SR-78 (Neighbours Blvd)/16th Avenue	9.7	A	9.8	A

Source: URS 2016

Roadway Segments

Roadway segment counts for a 24-hour period were conducted during September 2014 for the four key road segments. Table 3.17-3 provides a summary of the existing and peak year road segment conditions, including existing average daily traffic (ADT), percentage of traffic from trucks, and LOS under existing and peak year conditions. As shown in the table, all roadway segments are below capacity with 30-38 percent of traffic from trucks. All study roadway segments are currently operating at LOS C.

Table 3.17-3. Roadway Segment Conditions

Roadway	Cross-section Classification	Roadway Capacity	Truck Percent	Existing Average Daily Traffic	Existing LOS	Peak Year Average Daily Traffic	Peak Year Base LOS
I-10 west of SR-78	4-lane freeway	68,900	38%	26,000	C	28,080	C
I-10 east of SR-78	4-lane freeway	68,900	37%	27,500	C	29,700	C
SR-78 south of I-10	2-lane undivided	16,200	30%	2,105	C	2,273	C
16th Avenue west of SR-78	2-lane collector	11,700	30%	117	C	126	C

Source: URS 2016

3.17.1.3 Project Access

Regional Access

I-10 is the nearest freeway to the Project site. It provides regional east/west travel throughout the state, beginning in Santa Monica, continuing through Los Angeles and east past the California state border to Arizona and beyond. In the vicinity of the Project area, I-10 has two lanes per direction. The posted speed limit is 70 miles per hour (mph), and trucks comprise 37 to 38 percent of traffic on I-10 (URS 2016b). SR-78 (Neighbours Boulevard, Exit 236) provides a full interchange with this freeway; the east and west I-10 ramps at SR-78 are stop sign controlled.

Local Access

The local roadway facilities in the vicinity of the Project area include SR-78 (Neighbours Boulevard) and 16th Avenue/Seeley Avenue.

SR-78 (Neighbours Boulevard) is a two-lane roadway running on a north/south alignment connecting to I-10 via an existing interchange (Exit 236). SR-78 contains one 12-foot-wide travel lane per direction and is divided by a double-yellow center line with paved shoulders. The posted speed limit on SR-78 is 55 mph, except through the Town of Ripley, where the speed limit is 45 mph. Land uses along SR-78 in the Project vicinity include rural residential, agricultural, and industrial land uses. SR-78 is also referred to by local street names including Neighbours Boulevard, 28th Avenue and Rannells Boulevard. SR-78 has been identified as a key critical segment by the Riverside County's Congestion Management Program.

16th Avenue/Seeley Avenue is a two-lane roadway running on an east/west alignment connecting to SR-78 (Neighbours Boulevard). The proposed access route to the Project site is via 16th Avenue, which approximately 1.5 miles west of SR-78 becomes Seeley Avenue. Seeley Avenue is a generally unpaved dirt road providing access to local farms and the Project site.

Site Access

Access to the site would be from 16th Avenue/Seeley Avenue via SR-78. The Project site would be accessed directly from 16th Avenue/Seeley Avenue.

3.17.1.4 Public Transportation within the Vicinity of the Project

Public transportation within the vicinity of the Project consists of an airport, rail and bus services, and pedestrian facilities. Information about these forms of public transportation is provided below.

Airport Service

The nearest airport facility to the Project site is the Blythe Airport. Blythe Airport is a public facility located approximately 6 miles west of the City of Blythe and approximately 1.5 miles northeast of the Project site. The airfield has been open since 1940, when it was known as Bishop Army Airfield. The airport later became a part of Muroc Army Air Field, now known as Edwards Air Force Base.

Blythe Airport has two operating runways. Runway 8-26 (oriented east-west), the primary runway, is 6,543 feet long and 150 feet wide. Runway 17-35 (oriented north-south) is 5,800 feet long and 100 feet wide (AirNav.com 2015). Today, Blythe Airport is primarily used for general aviation (i.e., flights other than military and regularly-scheduled airline service and regular cargo flights).

Bus and Rail Service

Bus service is offered by the Palo Verde Valley Transit Agency (PVVTA) along SR-78 (Neighbours Boulevard) north and south of I-10. Bus route 3 runs along SR-78 (Neighbours Boulevard) south of I-10 towards Town of Ripley; this is the closest bus route to the Project site (Palo Verde Valley Transit Agency 2016).

There is no passenger rail service to Blythe.

Bicycle and Pedestrian Facilities

Bicycle facilities are generally classified as Class I (bicycle paths separated from roads), Class II (striped bicycle lanes within the paved areas of roadways), or Class III (signed bike routes that allow cyclists to share streets with vehicles). There are no bicycle facilities on or adjacent to the Project site (Riverside County 2010).

Pedestrian facilities include sidewalks, crosswalks, curb ramps, pedestrian signals, and streetscape amenities. The local roadways described above do not include any pedestrian facilities.

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3.18 Utilities and Public Services

This section describes the existing utilities and public services relevant to the Project. No utilities are available on-site. However, this section provides an overview of available infrastructure in the vicinity of the Project, as relevant to its construction, operation and maintenance, and decommissioning.

3.18.1 Environmental Setting

3.18.1.1 Utilities

A variety of sources in Riverside County and the City of Blythe provide and maintain utility and service system facilities associated with water, solid waste, electricity, and natural gas. Underground Service Alert (also known as USA or "Dig Alert"), a non-profit organization supported by utility firms, provides specific information on the location of underground utilities to contractors upon request, prior to ground-disturbing construction activities.

3.18.1.1.1 Water and Wastewater

The water supplies used for the Project area's agricultural irrigation and the water supplies underlying the Project area (Palo Verde Mesa Groundwater Basin), are under the jurisdiction of the Palo Verde Irrigation District (PVID). Colorado River water, supplied through PVID canals, is lifted onto the mesa by private pumps to irrigate a portion of the acreage in the PVID. The remaining mesa irrigated acreage is irrigated from deep wells developed by the landowners. An investigation of the property identified two wells located on BLM land within the proposed Project area. These two wells were unsecured and open, and BLM has no knowledge of their origin or use. A third well was identified in the northeast corner of the private land parcel. This well was capped and located near irrigation piping, and may have formerly been used to provide irrigation for agricultural activities on the parcel (URS 2015).

The Project is located near the City of Blythe. The City of Blythe currently provides nearly 3,300 water service connections to customers, which are located within the City's municipal boundaries. The City of Blythe is served by four individual water systems: City of Blythe proper water system, Mesa Bluffs water system, Hidden Beaches water system, and East Blythe County water district. Some rural residences within the City's corporate boundary obtain their water from private wells (City of Blythe 2007). The City's water supply is dependent upon a part of the Colorado River entitlement of the PVID. The City of Blythe lies entirely within the PVID service area, and the City's water use is almost entirely accounted for as a part of PVID's water use. PVID's water supply is unique in California. The District holds the Priority 1 rights to California's share of Colorado River water, and a shared portion of the Priority 3 rights, and their rights are not quantified by volume. Rather, their water rights are for irrigation and potable water needed to serve a total of 131,298 acres in the Palo Verde Valley, 26,798 of which are on the Palo Verde Mesa (PVID 2012).

The Project would require the use of water during both construction and operations. During construction, water would be used for fugitive control, soil compaction associated with site preparation and grading activities, sanitary purposes, and fire control. The Applicant estimates

that the 25-month construction timeframe would require a total of approximately 1,400 AF of water, or 700 AFY, and that a 48-month construction timeframe would require approximately 1,800 AF of water, or 450 AFY. Water for construction would be supplied either through existing local wells, or through two newly installed wells. In the event an off-site water supply is required, construction water would be transported to the site by truck.

The City of Blythe owns and operates the Regional Wastewater Reclamation Facility, a Class III Facility, located at 15901 South Broadway in the City of Blythe. The City of Blythe also owns a sewage collection, treatment, and disposal system that provides sewage services to the City. The facility treats approximately 1.3 million gallons per day of dry weather flow. The facility is permitted to discharge up to 2.4 million gallons per day of treated wastewater to percolation / evaporation ponds (City of Blythe 2016).

Sanitary needs during construction would be served by the use of portable toilets. Portable toilets would be serviced by licensed contractors, and waste would be regularly pumped and hauled to proper disposal facilities. During operations, sanitary needs would be supplied by a septic system and leach field located near the O&M Building. The onsite sanitary system would require construction and annual operating Onsite Wastewater Treatment System (OWTS) permits from the County.

3.18.1.1.2 Solid Waste Management

The Riverside County Waste Management Department operates seven landfills, seven transfer stations, and a grinding facility within the County. The nearest landfills that serve the Project area include the Blythe Landfill at 1000 Midland Road, which is approximately 17 miles north of the Project site, and Desert Center Landfill at 17-991 Kaiser Road in Desert Center, which is approximately 40 miles west of the Project site (Riverside County Waste Management Department 2016).

3.18.1.1.3 Natural Gas and Electricity

Southern California Gas Company (SCGC) provides gas service to the City of Blythe and surrounding Riverside County. SCGC's service territory encompasses approximately 20,000 square miles in diverse terrain throughout Central and Southern California, from Visalia to the Mexican border.

Southern California Edison (SCE) provides electric service to residences and businesses in the City of Blythe and surrounding area. Currently, SCE has transmission lines ranging from 500 kV to local distribution service lines of 12 kV. A major 500 kV transmission corridor passes through Palo Verde Valley and connects the Southern California market with generating plants located in Blythe and in the state of Arizona.

3.18.1.1.4 Stormwater

At present there are no stormwater facilities located on-site or in the immediate vicinity of the Project. Construction of the Project would include development of stormwater controls to manage runoff around and/or within the Project site.

3.18.1.2 Public Services and Facilities

This subsection describes public services and facilities in the Project area, which includes education; law enforcement; fire protection; hazardous materials emergency response; hospital facilities and emergency response; utilities; natural gas and electricity; water and wastewater; and solid waste.

3.18.1.2.1 Education

The Project area is located within the Palo Verde Unified School District. Palo Verde Unified School District serves Blythe and other remote areas of Riverside County and consists of three elementary schools, two middle schools, one high school, and a continuation high school. Palo Verde Unified School District is the district with authority to assess school impact fees from the Project. Table 3.18-1 includes the schools and enrollment in Palo Verde Unified School District.

Table 3.18-1. Summary of Schools and Enrollment in Palo Verde Unified School District, 2014-2015

School Name	Community	Grades	Location	Number of Students
Felix J. Appleby Elementary School	Blythe	K – 6	401 S. Third Street	555
Margaret White Elementary School	Blythe	K – 6	610 N. Broadway	607
Ruth Brown Elementary School	Blythe	K – 6	241 N. Seventh Street	625
Blythe Middle School	Blythe	7 – 8	825 N. Lovekin Blvd.	499
Palo Verde Valley Community Day	Blythe	6 - 10	190 North Fifth Street	12
Palo Verde High School	Blythe	9 - 12	667 N. Lovekin Blvd.	933
Twin Palms Continuation	Blythe	9 - 12	811 West Chanslor Way	101

Source: National Center for Education Statistics 2016.

3.18.1.2.2 Law Enforcement

BLM, the City of Blythe, and the Riverside County Sheriff's Department provide law enforcement and public safety in the Project area. The City of Blythe Police Department (BPD) is located at 240 North Spring Street in Blythe and its service area covers all land in the City limits, which is approximately 27 square miles. The Riverside County Sheriff's Department services include traffic control and neighborhood policing, emergency calls, and crime prevention. The Riverside County Sherriff's Department's Colorado River Station at 260 North Spring Street in Blythe provides service from the community of Red Cloud to the west to the Arizona state line in the east, Imperial County line to the south, and San Bernardino County line to the north. Communities included in this service are Desert Center, Eagle Mountain, Blythe, Hayfield, Midland, Nicholls Warm Springs, Ripley, and the Colorado River area. The California Highway Patrol (CHP) is the primary law enforcement agency for state highways and roads. The

nearest CHP station to the Project area (Blythe Station 660) is located at 430 S. Broadway in the City of Blythe. Services include law enforcement, traffic control, accident investigation, and the management of hazardous materials spill incidents.

3.18.1.2.3 Fire Protection

The Riverside County Fire Department (RCFD)/California Department of Forestry (CAL FIRE) would provide fire protection to the Project site. The Bureau of Land Management California Desert District has responsibility for wildland fire protection in the Project area. The Project area is located within the RCFD's East Desert Division, which encompasses the lower Coachella Valley, east to the Arizona state line. RCFD services include municipal and wildland fire protection and prevention services, pre-hospital emergency medical services including paramedics, hazardous materials response, and technical rescue services. There are two battalions, nine permanently staffed fire stations, and two all-volunteer fire stations. The nearest fire stations are within the jurisdiction of RCFD Battalion 8. These include the Blythe, Ripley, Blythe Air Base, River Bend, and Lake Tamarisk fire stations. The closest station to the Project site area is Ripley Fire Station 44, on 13987 Main Street, approximately five miles away. This station has two firefighters and one certified paramedic. Ripley Fire Station 44 has one Type 1 fire engine and operates 24 hours per day, seven days a week.

The Project area falls within acceptable Total Response Time policy standards for an 'outlying' land use area based on its proximity to the nearest station (Station 45, Blythe Air Base, 17280 W. Hobson Way, Blythe, CA 92225) and that station's ability to meet the seventeen minute and 30 second response time standard. Additionally, the Project site is in close proximity to the City of Blythe Volunteer Fire Department.

Other nearby fire stations are Blythe Air Base Fire Station 45, Blythe Fire Station 43, River Bend Fire Station 46 (volunteer only), and Lake Tamarisk Fire Station 49 in Desert Center. Each of these fire stations has one Type 1 fire engine and provides paramedic services. Each of these fire stations has three personnel (two firefighters and one certified paramedic), with the exception of Lake Tamarisk, which has four personnel (two firefighters and two certified paramedics). The River Bend volunteer station is a reserve volunteer station and does not operate 24 hours per day, seven days a week. This station provides reserve personnel in case of an emergency but does not respond directly to an emergency. All stations are dispatched by CAL FIRE Riverside Unit/RCFD Emergency Command Center under the integrated Fire Protection System. All BLM California Desert District stations are dispatched through the Federal Interagency Communications Center.

3.18.1.2.4 Hazardous Materials Emergency Response

The Riverside County Hazardous Materials Management Division under the Department of Environmental Health is the Certified Unified Program Agency/Administering Agency (CUPA), with three participating agencies: Banning Fire Department, Corona Fire Department, and the RCFD. The CUPA Program conducts inspections of businesses that handle hazardous materials, generate hazardous waste, treat hazardous waste, and/or maintain underground storage tanks. RCFD would handle the response to emergency releases of hazardous material or waste for the Project. The closest RCFD Hazardous Materials Response Team (Station 81) is located at 37995 Washington Street in Palm Desert, California. Station 81 will respond with one Hazardous

Materials Response Unit staffed with three personnel and one Hazardous Materials Support Unit staffed with two personnel. One member of the five-person team is a certified paramedic.

3.18.1.2.5 Hospital Facilities and Emergency Response

There are several hospitals/medical facilities that provide medical services to the vicinity of the Project area. Table 3.18-2 below provides a summary of the following hospitals that provide medical services in eastern Riverside County, including the Project area. Desert Regional Medical Center is the closest trauma care center to the Project area and the only trauma center in the Coachella Valley. It is a Level II trauma center and provides a full range of specialists and services available 24 hours a day. Palo Verde Hospital provides intensive care services.

The CHP's Border Division Air Operations Unit, located at the Thermal California Station, may respond to a traumatic injury occurring in the Project area that requires medical evacuation via helicopter. However, the CHP usually covers Medevac situations in the area surrounding Palm Springs and rarely in the Blythe area. There are a number of additional Medevac companies that service the Project area. If a serious emergency medical incident were to occur at the solar array field, the paramedic or first responder would call in the emergency. Based on rotation and proximity, a Medevac service would be dispatched to the solar array field for evacuation to Desert Regional Medical Center in Palm Springs. The companies that provide Medevac services to the Project area are Merci Air Service, Reach Helicopter, Care Flight, and the CHP.

Blythe Ambulance, located at 129 South 1st Street in Blythe, also provides emergency medical response services in the Project area. This facility is located approximately seven miles east of the Project area.

Table 3.18-2. Hospitals and Clinics Serving the Project Area

Facility	Approximate Distance from Project Area	Services Provided
Palo Verde Hospital 250 North First Street Blythe, California 92225	7 miles northeast	Hospital, blood bank, computerized tomography scan, intensive care unit, labor/delivery/recovery rooms, magnetic resonance imaging, nuclear medicine, outpatient services, ultrasound.
La Paz Medical Services 150 East Tyson Road Quartzsite, AZ 85359	30 miles east	General medical services and treatments.
John F. Kennedy Memorial Hospital 47111 Monroe Street Indio, CA 92201	85 miles west	Hospital, cardiac and vascular, orthopedics and JFK Bone and Joint Institute, obstetrics, outpatient rehabilitation, women and children, emergency department, emergency and express care.
Desert Regional Medical Center 1150 N. Indian Canyon Drive Palm Springs, CA 92262	105 miles west	Hospital, comprehensive cancer center, inpatient rehabilitation, institute of orthopedics and neurosciences, women and infants center, wound center, hospice, surgery, emergency/trauma services, cardiac/heart care, anesthesiologists, and physical therapists.

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3.19 Visual Resources

Visual resources are the natural and/or man-made elements of the landscape that contribute to the aesthetic and/or scenic character and quality of the environment. This section describes the environmental setting in regards to aesthetics, visual resources, glare, and reflection for the proposed Project and alternatives. BLM's visual resources inventory provides information regarding the scenic quality, visual sensitivity and visibility of the Project site.

3.19.1 Environmental Setting

3.19.1.1 Regional Setting

The Project would be located on the Palo Verde Mesa in the southern section of the Basin and Range Physiographic Province in Riverside County, California. The Palo Verde Mesa is relatively flat, with occasional desert washes and decreases in elevation toward the Palo Verde Valley to the southeast. The Palo Verde Mesa is bordered on the north by the McCoy Mountains, and on the southwest by the Mule Mountains. The mountain ranges in the area trend northwest to southeast, and create a natural barrier between the Colorado River and the greater Colorado Desert.

3.19.1.2 Visual Character

The visual character of the regional landscape depends on visual variables such as season, climate, atmospheric and lighting conditions, cultural modifications, and the visibility, presence, and extent of character-defining visual features. The visual quality of the landscape, visual variables, and the manner in which a viewer experiences the landscape setting (i.e., the cumulative impression felt by different types of users traveling through an area) are all factors that combine to produce visual experiences that are unique to the Project, and difficult to quantify. However, the visual character of the region can be broadly generalized within two primary contexts: the natural landscape and the built environment (i.e., areas where cultural modifications dominate, or nearly dominate the visual character of an area).

The natural landscape of the Project area is generally characterized by large expanses of desert and agricultural croplands. The Project area on the Palo Verde Mesa is relatively flat, but the nearby Mule and McCoy Mountains provide scale, variety, interest, and enclosure to the broader landscape. The Mule and McCoy Mountains are recognized by the Palo Verde Valley Area Plan as rugged visual landmarks that accent the area's environment (Riverside County 2015b). Vegetation in the Project area is primarily composed of creosote scrub and open desert. Agricultural land east of the Project area includes a variety of cultivated crops and provides a visual contrast compared to the arid desert west, south and north of the Project area. The Colorado River is located east of the Project area and is considered a substantial recreation and tourist attraction (Riverside County 2015b).

The built environment visible from within the vicinity of the Project includes residences, the Blythe Airport, the Blythe Energy Center, the Modified Blythe Solar Power Project (BSPP), the Colorado River Substation (CRSS), electrical transmission lines, and commercial businesses that are primarily located east, north and south of the Project area. Interstate Highway 10 (I-10),

which has status as an Eligible County Scenic Highway, passes north of the Project site in an east-west alignment.

Based on the Project site, viewer groups, the location of public roadways, BLM facilities, and other public vantage points, eight key observation points (KOPs) were chosen in consultation with the BLM. The purpose of the KOPs was to capture representative views of the Project site to be used in visual simulations of the Project, and as an aid in preparing visual contrast ratings of the Project. The locations of the KOPs are shown in Figure 3.19-1; however, the visual characteristics of each viewpoint and the Project-related visual contrast are fully detailed in Section 4.19.

3.19.1.3 Existing Light and Glare

Based on the relatively undeveloped nature of the surrounding landscape, there are very few sources of light associated with the Project area. The primary source of light and glare in the area is motor vehicles traveling on surrounding roadways and from residences in Nicholls Warm Springs/Mesa Verde. During daytime hours, roadways generate glare from the sun's reflection off cars and paved surfaces. Likewise, at night, vehicle headlights on surrounding roadways generate light and glare. Lighting is also located on the Blythe Energy Center site; at the Blythe Airport to alert aircraft of potential hazards in their flight path; and at Palo Verde College.

3.19.1.4 Approach to Baseline Analysis

BLM's Visual Resource Management (VRM) Policy is the agency's implementation of requirements from FLPMA and NEPA for managing scenic resources. Pursuant to FLPMA, BLM has developed and applied a standard visual assessment methodology to inventory and manage scenic values on lands under its jurisdiction. BLM Manual 8400-Visual Resource Management (BLM 1984), Handbook 8410-Visual Resource Inventory (BLM 1986a), and Manual 8431-Visual Resource Contrast Rating (BLM 1986b) set forth the policies and procedures for determining visual resource values, establishing management objectives, and evaluating Proposed Actions for conformance to the established objectives for BLM-administered public lands. The following describes the three primary elements of the BLM's VRM Policy.

Determining Visual Resource Values

The primary means to establish visual resource values are to conduct a Visual Resource Inventory (VRI), as described in BLM Handbook H-8410. There are four VRI Classes (I to IV) assigned as a representation of the relative visual value. VRI Class I has the highest value and VRI Class IV has the lowest. VRI Class I is assigned to areas where a management decision was previously made to maintain a natural landscape, such as wilderness areas, wild sections of wild and scenic rivers, and other congressionally and administratively designated areas such as visually sensitive ACECs. Visual resource values are determined through a systematic process that documents the landscape's scenic quality, public sensitivity, and visibility. Rating units for each of these factors are mapped individually, evaluated, and then combined through an over-layering analysis using GIS. The three factors are briefly described below.

Scenic Quality: Scenic Quality Rating Units (SQRUs) are delineated based on common physiographic characteristics of the landscape. There are seven criteria used for inventorying the landscape's scenic quality within each SQRU: landform, vegetation, water, color, influence of adjacent scenery, scarcity, and degree of cultural modification. Each factor is scored for its respective contribution to the scenic quality, the scores are summed, and the unit is given a rating of A (highest), B, or C (lowest) based on the final score.

Sensitivity Level: Sensitivity Level Rating Units (SLRU) are delineated and evaluated for public sensitivity to landscape change. Criteria used for determining level of sensitivity within each unit includes types of use, amount of use, public interest, adjacent land uses, special areas, and other factors. Each criterion is ranked high, medium, or low and an overall sensitivity level rating is then assigned to the unit.

Distance Zones (visibility): The third factor is visibility of the landscape evaluated from where people commonly view the landscape. The distance zones are divided into foreground/middleground (0 to 5 miles); background (5 to 15 miles); and seldom seen (beyond 15 miles or topographically concealed areas within the closer range distance zones).

The relationships between the rated values of scenic quality, sensitivity level, and visibility are cross-referenced with the VRI Matrix to determine the VRI Class, as shown in Table 3.19-1. VRI classes are informational in nature and provide the basis for considering visual values in the RMP process. They are considered the baseline data for existing conditions.

Table 3.19-1. Determining Visual Resource Inventory Classes

		Sensitivity Level								
		High			Medium			Low		
Special Areas		I	I	I	I	I	I	I	I	I
Scenic Quality	A	II	II	II	II	II	II	II	II	II
	B	II	III	III/IVa	III	IV	IV	IV	IV	IV
	C	III	IV	IV	IV	IV	IV	IV	IV	IV
		Fg/mg	Bg	Ss	Fg/mg	Bg	Ss	Fg/mg	Bg	Ss
		Distance Zones								

Notes:
a. If adjacent area is Class III or lower, assign Class III, if higher assign Class IV.
Fg/mg=Foreground/Middleground
Bg=Background
Ss=Seldom seen
Source: BLM 1986a

Establishing Management Objectives

VRM Classes, defined in Table 3.19-2, are determined by considering the assigned VRI Class (visual values) along with resource allocations or special management decisions made in the applicable RMP. Management objectives for each VRM Class set the level of allowable visual change to the landscape that may be permitted for any surface-disturbing activity. The objective of VRM Class I is to preserve the character of the landscape, whereas VRM Class IV provides for activities that require major modification to the landscape.

Table 3.19-2. Visual Resource Management Classes

VRM Class	Objective
Class I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
Class II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Class III	The objective of this class is to partially retain the existing character of the landscape. The level of change to characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Class IV	The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Source: BLM 1986a

The VRM classes are a land use plan decision and mandate how the visual environment is to be treated in future land management actions and subsequent site-specific implementation decisions. The VRM classes are to be designated for all BLM-administered lands. The VRM class designations may be different than the VRI classes assigned in the inventory. For example, an area with a VRI Class II designation may be assigned a VRM Class IV designation, based on its overriding value for mineral resource extraction, or its designation as a utility corridor.

The applicable RMP for the Project is the CDCA Plan. The CDCA Plan does not contain a visual resource element and has not established VRM Classes. Interim VRM Classifications are typically established when a project is proposed and there are no RMP or Management Framework Plan-approved VRM Classifications. If the area is also without a VRI, then one must be conducted in order to provide a baseline of data by which to analyze impacts and to consider when establishing Interim VRM Classes. The Interim VRM Class for the Project area is discussed in Section 3.19.1.6.

Evaluating Proposed Actions

Proposed plans of development are evaluated for conformance to the VRM Class objectives through the use of the Visual Resource Contrast Rating process set forth within BLM Manual 8431. Because this concerns the environmental consequences of the Proposed Action, this process is further described and applied in Section 4.19.

3.19.1.5 Visual Resource Inventory of the Project Area

The visual resource characteristics of the Project area are summarized in the Applicant's Visual Resources Technical Report (URS 2016c), provided as Appendix U.

Sources of Visual Resource Inventory Data

The BLM Palm Springs Field Office recently conducted a large-scale visual resource inventory of BLM-administered lands extending east from Palm Springs to the Arizona border. This inventory is used as the source of baseline data (BLM 2010).

Scenic Quality Rating

Scenic quality is a measure of the visual appeal of an area created by the features of the landscape, including both natural landscape features (landform, vegetation, water, color, adjacent scenery, and scarcity) and man-made features (roads, structures, and agriculture). The scenic quality of the landscape was assessed based on the criteria used in the BLM VRM system's Visual Resource Inventory (VRI) scenic quality rating system, described in BLM Handbook H-8410, Visual Resource Inventory (BLM 1986a). Criteria including distinctiveness, contrast, variety, harmony, and balance are assessed and scenic quality classes A, B, or C are assigned. Scenic quality classes are defined as follows:

Class A: Areas have outstanding diversity or interest; characteristic features of landform, water, and vegetation are distinctive or unique in relation to the surrounding region. These areas contain considerable variety in form, line, color, and texture.

Class B: Areas have above-average diversity or interest, providing some variety in form, line, color, and texture. The natural features are not considered rare in the surrounding region but provide adequate visual diversity to be considered valuable.

Class C: Areas have minimal diversity or interest; representative natural features have limited variation in form, line, color, or texture in the context of the surrounding region. Discordant cultural modifications (e.g., substations, transmission lines, other cultural modifications) can be highly noticeable, which can reduce the inherent value of the natural setting.

The Project area overlaps six Scenic Quality Rating Units (021 (Chuckwalla Valley), 026 (McCoy Mountains), 036 (Blythe Valley), 037 (Palo Verde), 038 (Mule Mountains), and 039 (Little Chuckwalla Mountains)). Four of these units are rated Class B and two (026 (McCoy Mountains) and 037 (Palo Verde)) are rated Class C due to lack of naturalness (BLM 2010).

Visual Sensitivity

Visual sensitivity is defined as a measure of public concern for scenic quality (BLM 1986a). Sensitivity Level Rating Units (SLRUs) represent a geographic area where public sensitivity to change of the visual resources is shared amongst constituents. Visual sensitivity ratings within each SLRU are estimated as high, moderate, or low.

The Project site is located in SLRU 49, Bradshaw Trail Backcountry Byway. Visual sensitivity in this SLRU was classified as high, primarily due to presence of the Byway, high OHV use, and importance of maintaining scenic quality to sustain land use objectives of neighboring

Wilderness areas, ACECs, and military ranges. There are three SLRU's adjacent to the Project site, two of which (McCoy and Little Chuckwalla Mountains) have visual sensitivity classified as medium and one (Mule Mountains) classified as high visual sensitivity (BLM 2010).

Visibility and Distance Zones

Distance zones, or visibility thresholds, for this Project were based on a review of distance zones used by the BLM for VRI assessment (BLM 1986a). Distance zones represent the distance from which the landscape is most commonly viewed and are established by buffering common travel routes and viewer locations at distances of 5 miles and 15 miles.

The Project site is located in the foreground-middleground distance zone, indicating visibility of this area from locations within 0 to 5 miles from viewing platforms. Primary viewing platforms include I-10 and SR-78 (BLM 2010).

3.19.1.6 Interim Visual Resource Management Class Recommendation

As discussed above, currently no VRM Classes are established for lands under BLM jurisdiction within the CDCA Plan area, and VRM classes differ from VRI Classes in that they represent decisions about how the land will be managed in conjunction with resource allocations and management priorities outlined in the applicable RMP. The designation and adoption of Interim VRM classes conducted in support of a specific project is a BLM Field Office Manager decision. The Project site is located in an area designated as VRI Class II, indicating high scenic value. However, the BLM Field Office Manager has assigned a Class III Interim VRM Objective to the Desert Quartzite Solar Project footprint (Dalton 2015).

3.20 Water Resources

This section describes the existing groundwater and surface water resources in the vicinity of the Project site. In addition to describing the existing conditions, this analysis examines the affected environment within the Project footprint and vicinity, where appropriate.

3.20.1 Environmental Setting

The Project would be located on the Palo Verde Mesa in the Mojave Desert Physiographic Province in Riverside County, California. The physiography of the area consists of mountains, alluvial fans, alluvial fan remnants, and alluvial valleys, including active drainages and fluvial terraces, and internally drained basins. Elevations in the Project vicinity range from 260 feet amsl near the Colorado River to 2,054 feet amsl on McCoy Peak. The portion of the Project area located on BLM land is currently undeveloped. The 160-acre private parcel was previously the location of a jojoba farm.

The Project area is located in the largely alluvial-filled basin of the Palo Verde Mesa in eastern Riverside County bounded by the Big Maria and Little Maria mountains to the north, the McCoy and Mule Mountains to the west, and the Palo Verde Mountains to the south. Beneath the Palo Verde Mesa lies the Palo Verde Mesa Groundwater Basin (PVMGB), which is bounded by non-water-bearing rocks of the mountains to the north, west, and south, and by the Palo Verde Valley and Colorado River to the east. The PVMGB encompasses an area of about 353 square miles or 226,000 acres, is tributary to the lower Colorado River, and is part of the Colorado River aquifer (DWR 2004).

Surface water drains onto the Project site from the surrounding mountains to the north, south, and west, then towards the Colorado River to the east. Although the drainage flows in the direction of the Colorado River, the drainages were determined by the USACE to be ephemeral, intrastate, isolated waters, and not under the jurisdiction of the USACE. There are no perennial streams on the Palo Verde Mesa. A topographic map of the Project site is shown in Figure 2-7. The Project area consists of two distinct types of topography which affect site drainage. The northwestern portion of the Project area, comprising approximately half of the overall Project site, is part of an alluvial fan which slopes in a southeastward direction from the McCoy Mountains, which are located to the northwest. The I-10 highway crosses this alluvial fan in between the mountains and the Project site, so the natural flow of the alluvial fan is interrupted, passes through concentrated channels underneath a highway bridge, and then becomes dispersed again as it continues its route across the alluvial fan between I-10 and the Project site.

The southeastern portion of the site is a flat plateau, part of the Palo Verde Mesa. This area receives drainage from the alluvial fan to the northwest, but also from an alluvial fan system coming from the Mule Mountains to the southwest of the Project area. The ground surface in this area is characterized by a series of depressions in which surface water can pool temporarily. A drainage divide crosses from north to south through the eastern portion of the Project area. The depressions west of this divide drain surface water to the west and southwest, meeting the flow from the Mule Mountains and eventually draining off of the mesa to the southeast, towards the Colorado River. The depressions to the east of this divide drain directly to the east, towards the Colorado River.

The southeastern edge of the Project site is parallel to, and within a few hundred feet of, the sharp break in the slope that forms the boundary between the Palo Verde Mesa and the Palo Verde Valley, which is 80 to 130 feet below the mesa. In this region, the Palo Verde Valley is roughly equivalent to the recent historic floodplain of the Colorado River.

3.20.1.1 Groundwater

The Project site is located within the Palo Verde Mesa Groundwater Basin (PVMGB, Groundwater Basin Number 7-39), which has a drainage area of approximately 353 square miles. The basin is bounded by the Big Maria and Little Maria Mountains to the north, McCoy Mountains and Mule Mountains to the west, the Palo Verde Mountains to the south, and the Palo Verde Valley Groundwater Basin (PVVGB, Groundwater Basin Number 7-38) to the east. Average annual precipitation in the basin is six inches. Groundwater in the PVMGB is present in alluvial deposits consisting of lenticular beds of sand, gravel, silt, and clay. There are no known barriers to groundwater flow. Recharge is from the percolation of runoff which flows into the basin from the surrounding mountains, irrigation return flow, infiltration from canal seepage, direct precipitation in the basin, and underflow from the adjacent Chuckwalla Valley. Natural recharge is estimated to be 800 AF per year, and underflow from the Chuckwalla Valley is estimated to be 400 AFY. The total groundwater storage capacity is estimated at 6,840,000 AF.

According to groundwater level data acquired to support the analysis of the MSEP, depth-to-groundwater near the Project area ranges from approximately 148 feet below the surface just north of the Blythe Airport, to approximately 83 feet below the surface near the intersection of Hobson Way and Keim Boulevard. Groundwater levels are influenced by seasonal variations, variations in ground surface topography, precipitation, irrigation practices, soil/rock types, groundwater pumping, and other factors and are subject to fluctuations.

Water Bearing Units

The youngest major units in the Palo Verde region, the Older Alluvium and Younger Alluvium, were deposited by the Colorado River, and are the primary water-bearing units of the local aquifer system. The Older Alluvium comprises all of the known groundwater system deposits of the Palo Verde Mesa and extends beneath the Palo Verde Valley, underlying the Younger Alluvium. The Older Alluvium is much thicker than the Younger Alluvium, reaching thickness of 600 feet beneath the central portion of the valley and the mesa and pinching out along the bordering bedrock mountains.

The Pliocene Bouse Formation underlies the Quaternary sediments. The Bouse Formation includes a marine to brackish-water estuarine sequence deposited in an arm of the proto-Gulf of California (Wilson and Owen-Joyce 1994; Metzger 1968). This formation has alternatively been interpreted as, or may include, lacustrine sediments deposited in a closed, brackish basin (Stone 2006). These unconsolidated to semi-consolidated sediments are reported to yield several hundred gpm in wells perforated within coarse-grained units (Wilson and Owen-Joyce 1994).

The following information is from Metzger et al. (1973). The Bouse Formation is unconformably underlain by a fanglomerate composed chiefly of angular to subrounded and poorly sorted, partially to fully cemented pebbles with a sandy matrix. The fanglomerate is likely of Miocene age; however, it may in part be of Pliocene age. Bedding surfaces generally dip from the mountains towards the basin. The fanglomerate reportedly dips between 2 and 17 degrees near

the mountains due to structural warping. The amount of tilting indicates a general decrease in structural movements since its deposition.

Bedrock beneath the site consists of metamorphic and igneous intrusive rocks of pre-Tertiary age that form the basement complex (Metzger et al. 1973). The bedrock topography in the study area has not been determined but appears to lie at depths exceeding 1,000 feet below ground surface (bgs) in Parker Valley which is located over 3 miles northeast of the Project site, and thus bedrock is not likely to be a significant source of water (Metzger et al. 1973).

Aquifer Characteristics

In their development of a two-dimensional superposition model for the Parker-Palo Verde-Cibola area, which includes the PVMGB, Leake et al. (2008) evaluated published aquifer testing data and through statistical analysis derived a range of transmissivity values from a low value of 6,300 ft^2/day to an average value of 26,200 ft^2/day. They selected a storage coefficient of 0.20 to approximate aquifer conditions throughout their model domain, which includes the Chuckwalla Valley Groundwater Basin (CVGB) and the PVMGB.

Metzger et al. (1973) provided historical data from pumping tests that were conducted in the 1960s on wells in the PVMGB. They reported transmissivity values ranging from 64,000 to 1,900,000 gallons per day per foot (gpd/ft) of aquifer thickness (or 8,756 to 254,600 ft^2/day), specific yields from 100 to 2,180 gallons per minute per foot of drawdown, and hydraulic conductivities ranging from 210 to 12,300 gallons per day per square foot (gpd/ft^2). The data are summarized in Table 3.20-3. Groundwater production, from wells completed in the PVMGB, averages 1,650 gpm (DWR 1979). The DWR (1979) indicated that large well yields are common for properly designed and developed wells near the edge of the Palo Verde Valley floodplain, which is east of and adjacent to the PVMGB.

Well yields in the rest of the PVMGB, where sand is the dominant lithology, are lower. Yields greater than 1,000 gpm are reported in wells in the McCoy Wash area. The depth of these wells range from 250 to 600 feet and the wells are 12 to 16 inches in diameter (DWR 1979).

Groundwater Occurrence and Movement

The groundwater below the Project site in the central part of the mesa occurs under apparently semiconfined conditions in the older alluvium at a depth of about 200 feet bgs. In their estimate of groundwater storage, the DWR (1979) used an assumed average saturated thickness of 300 feet and a specific yield of 10 percent for the PVMGB to derive a usable storage of about 5 million AF, with about half of the usable storage estimated to be in the McCoy Wash part of the basin. In subsequent reports, the DWR (2003) listed the groundwater in storage for the basin as "unknown" although the total storage capacity in the basin was estimated to be approximately 6,840,000 AF.

As described in Section 3.7, *Geology and Soils Resources*, the Project site is not crossed by any known active faults or designated Earthquake Fault Zones. No known barriers or faults inhibit the flow of groundwater in the PVMGB (DWR 1978; DWR 2003).

Based on water level elevation contours for the PVMGB and PVVGB drawn from year 2000, the groundwater flows to the southeast towards the Colorado River. Based on the 2000 water level

data in the USGS and DWR databases (USGS 2009; as cited in BLM 2010), the hydraulic gradient is about 0.007 ft/ft.

A key feature of the groundwater occurrence and flow within the PVGB is the Palo Verde Irrigation District (PVID) drains situated in the Palo Verde Valley, between the Palo Verde Mesa on the west and the Colorado River on the east. The PVID provides water from the Colorado River to agricultural users in the area, and operates a series of canals which extend through the agricultural areas to the north and west of Blythe. The drains serve to recharge groundwater through leakage, and also serve as a discharge location for groundwater, which is then discharged back to the river through the drains. The water volumes involved comprise a large proportion of the overall groundwater budget for the PVGB.

Historic Groundwater Levels and Flow

AECOM (2009) reported that the water level data from 1971 show local variations in water level contours in the area, which reflects localized pumping in support of agriculture. Water level data from 2000 show that the water levels had recovered in the area due east of the site, and show a southerly flow of groundwater coincident with the flow in the Colorado River. Recovery of groundwater levels may have also been influenced by the application of canal water to mesa crops by PVID, in order to manage salinity. Groundwater flow in the PVMGB is from the north, southeast through McCoy Wash at a gradient of 0.001 ft/ft, then south-southwest at gradients of between about 0.0003 and 0.0008 ft/ft in a direction coincident with the flow of the Colorado River (AECOM 2009).

AECOM (2009) reported that hydrographs indicate that the water level in the PVMGB has generally remained stable over the past few decades, except in areas immediately adjacent to some pumping wells. In well Township 4 Range 21 Section 9B1 at the north end of the PVMGB, groundwater elevation remained unchanged from 1971 to 2000. In wells north of the DQSP site, groundwater elevations have decreased about 5 feet in well Township 5 Range 22 Section 31E1 from 1966 to 2000 and in well Township 6 Range 22 Section 32R1 from 1947 to 2006. The relatively stable groundwater levels that have been measured over this period suggest that groundwater withdrawal from the underlying aquifer has not significantly changed the water balance within the PVMGB. This is probably in large part due to recharge of water from the Colorado River (AECOM 2009).

Groundwater levels are also evaluated using the Colorado River Accounting Surface methodology proposed by the USGS (USGS 2009). A review of the Figure 6 in the USGS analysis shows that the Accounting Surface elevation in the vicinity of the Project is approximately 237 feet above sea level. From Figure 5 in the Groundwater Modeling Report (URS 2016d), the groundwater elevation in the Project area is approximately 245 to 250 feet above sea level. A value of 245 feet above sea level for the PVMGB is also used in the analysis of the impact of solar project development in the East Riverside SEZ by Greer et. al. (2013).

Groundwater Balance

Table 3.20-1 presents the estimated annual groundwater budget for the PVGB, and the following subsections describe the inflow and outflows associated with the basin. The groundwater balance was developed in support of the groundwater impact analysis for the MSEP (BLM 2012b). In support of the DQSP analysis, the Applicant's technical contractor and BLM staff

have reviewed the groundwater balance, and concur that it still accurately reflects the groundwater conditions in the PVGB. The balance presented in Table 3.20-1, and the following discussion of the various inflows and outflows, are derived from the MSEP analysis.

Recharge into PVGB

Recharge of groundwater in the PVGB consists of a combination of discharge of Colorado River surface water into the groundwater, leakage from the PVID canal system, infiltration of water applied to irrigate crops, percolation of precipitation, subsurface underflow from adjacent groundwater basins, and percolation from the Blythe Wastewater Reclamation Facility.

Of these sources of recharge, the largest is discharge of surface water from the Colorado River, accounting for more than half (225,850 AFY) of the total 426,600 AFY of recharge into the PVGB. An estimated 120,000 AFY is returned to the PVGB from leakage from irrigation canals. Both of these sources are located in the eastern part of the PVGB, which is the PVVGB.

Infiltration of water used to irrigate crops is the next largest component of the recharge to the PVGB. Again, most of this infiltration (67,000 AFY) occurs in the PVVGB area, and a much smaller amount (3,500 AFY) occurs on the PVMGB. Of the infiltration on the PVMGB, approximately 3,600 AFY of groundwater is directly pumped from wells on the mesa for irrigation use on 724 acres of agricultural land. In addition, the PVID pumps surface water uphill from the irrigation canal system in the Palo Verde Valley to irrigate 1,862 acres on the Palo Verde Mesa. The groundwater assessment prepared for the MSEP used estimates of 4.5 to 5.85 AF/ac/year and a crop efficiency of 70 to 75 percent on these combined 2,683 acres on the mesa. Assuming that 25 to 30 percent of the water applied to crops infiltrates and recharges the groundwater basin, an estimated 3,600 AFY recharges the PVMGB from irrigation return flow.

In this area of the Colorado Desert, almost all moisture from rain is lost through evaporation or evapotranspiration and runoff occurs principally during intense thunderstorms. Most recharge from precipitation occurs when runoff from the surrounding mountains exits bedrock canyons and flows across the coarse sediments deposited along the western edge of the PVMGB. In the MSEP analysis, methods to estimate runoff proposed by Hely and Peck (1964) were used to estimate mean annual runoff and infiltration in the PVMGB. From the estimated total runoff for the PVMGB, an estimate of five percent of the estimated total volume of rainwater from mean annual precipitation was used to generate an estimate of total annual infiltration volume (AF) for the basins. This analysis estimated 5,000 AFY of groundwater recharge from precipitation.

Underflow from adjacent groundwater basins contributes approximately one percent of the overall recharge of groundwater in the PVGB. Subsurface inflow from the CVGB eastward into the PVMGB is estimated to be 1,000 AFY, and subsurface inflow into the PVGB from the Parker Valley Groundwater Basin on the east is estimated to be 3,500 AFY.

The smallest contributor to groundwater recharge in the PVGB is percolation of an estimated 750 AFY from the percolation-evaporation ponds at the Blythe Regional Water Reclamation Facility.

Table 3.20-1. Estimated Annual Groundwater Budget in the Palo Verde Valley Groundwater Basin

Budget Components	Budget (AFY)
Recharge (Inflow)	
Underflow from Chuckwalla Valley Groundwater Basin	1,000
Underflow from Parker Valley Groundwater Basin	3,500
Agricultural Return – Mesa	3,500
Agricultural Return – Valley	67,000
Percolation from Blythe Wastewater Reclamation Facility	750
Percolation from Mountain Front Precipitation	5,000
PVVGB Irrigation Canal Leakage (less evaporation)	120,000
River Discharge to PVVGB Groundwater (Losing Condition)	225,850
Bedrock	0
Total Inflow	**426,600**
Discharge (Outflow)	
Underflow out of the Palo Verde and Cibola Valley Aquifer	0
Groundwater Pumping for Agriculture – Mesa	3,600
Groundwater Pumping for Municipal and Domestic Use	7,500
PVVGB Groundwater Discharge to Colorado River (Gaining)	50,000
Consumptive Use – Native Vegetation	8,500
PVVGB Groundwater Discharge through PVID Drains	357,000
Total Outflow	**426,600**
Budget Balance (Inflow-Outflow)	**0**

Source: URS 2016d

Outflow from PVGB

The largest component of outflow of groundwater from the PVGB is discharge to the PVID drains, which return the water to the Colorado River. The drains comprise approximately 83.7 percent (357,000 AFY) of the total 426,600 AFY outflow from the PVGB. An additional 50,000 AFY (another 11.7 percent) is returned from the groundwater to the river through groundwater discharge in gaining sections of the river. The remaining 19,600 AFY (or approximately 4.6 percent) is pumped for use in agriculture (3,600 AFY), for municipal or domestic use (7,500 AFY), or lost through evapotranspiration by native riparian vegetation (8,500 AFY).

Groundwater Quality

In general, water quality in the PVMGB is generally higher near the edge of the Palo Verde Mesa adjacent to the Colorado River floodplain. The amount of dissolved solids becomes progressively higher away from the Colorado River floodplain and with depth (AECOM 2011), although the application of surface water in select portions of the PVMGB could result in localized net reductions in dissolved solids concentrations. The groundwater chemistry in the vicinity is generally sodium sulfate-chloride in character (DWR 2003). According to AECOM (2011), the Total Dissolved Solids (TDS) content of shallow groundwater in the basin ranges from 730 to 3,100 milligrams per liter (mg/L), while the TDS of deeper groundwater is higher at 4,500 mg/L.

Table 3.20-2 presents the analytical results for a select number of wells that were sampled between October 1962 and April 1966 located in the area. Given the long screen interval for these wells, and the uncertain methodology of sampling the wells, these data likely represent an average water quality of the more permeable sediments over the screen interval. A review of the water quality data for the PVMGB and PVVGB in Table 3.20-2 indicate the following:

1. TDS concentrations (466 to 5,640 mg/L) generally exceeded the recommended standard of 500 mg/L for a drinking water resource in California. TDS concentrations above 1,000 mg/L were reported.
2. Fluoride concentrations (0.2 to 6.3 mg/L) in some cases exceed the State of California Maximum Contaminant Levels (MCLs) for drinking water (2.0 mg/L). Fluoride concentrations above the MCL are present in water samples from wells on the Mesa. Concentrations are significantly lower and below the MCL in water samples from wells located in the floodplain.
3. Chloride concentrations range from 77.7 to 3,220 mg/L, and in some cases exceed the State of California Secondary MCL for drinking water (250 mg/L). Higher concentrations are found in wells on the Mesa in the area of McCoy Wash.
4. Boron concentrations range from 40 micrograms per liter [µg/L] to 2,000 µg/L. Based on data collected in 2009, most of the water samples collected underlying that site exceeded the State of California Action Level for drinking water (1,000 µg/L).
5. Sulfate concentrations range from 90 to 1,850 mg/L, and in some cases exceed the State of California Secondary MCLs for drinking water (250 mg/L). The highest concentrations mirror those found for chloride and are located in the area east of the site and in the area of McCoy Wash.

Table 3.20-2. Summary of Groundwater Quality Data (all values reported in mg/L[c] unless otherwise indicated)

Analyte[a,b]	Test Well (October 2009)a	Well 5/22-28C1 (Oct-1962)	Well 5/22-33J1 (Oct-1962)	Well 6/21-36R1 (May 1964)	Well 6/22-17L1 (April 1966)	All Palo Verde Mesa Groundwater Basin Wells[a]
Arsenic	ND<0.01	--d	--	--	--	0.0011
Bicarbonates as HCO3	--	--	--	--	--	20 – 736
Boron	1.41	--	--	1.07	1.4	0.04 – 2.0
Calcium	287	--	--	--	--	9.21 – 844
Carbonates as CO3	--	--	--	--	--	0 – 12
Fluoride	1.3	--	1.7	3	--	0.02 – 6.30
Chloride	370	440	400	420	380	77.7 – 3,220
Iron	0.123	--	--	--	--	0 – 0.4
Magnesium	29.6	--	--	--	--	0.1 – 351
Manganese	ND<0.005	--	--	--	--	0 – 3.9
Nitrate	(N)	ND<0.01	--	--	--	--
Selenium	ND<0.015	--	--	--	--	--
Sodium	457	--	--	--	--	0 – 2,000

Table 3.20-2. Summary of Groundwater Quality Data (all values reported in mg/L[c] unless otherwise indicated)

Analyte[a,b]	Test Well (October 2009)a	Well 5/22-28C1 (Oct-1962)	Well 5/22-33J1 (Oct-1962)	Well 6/21-36R1 (May 1964)	Well 6/22-17L1 (April 1966)	All Palo Verde Mesa Groundwater Basin Wells[a]
Sulfate	970	970	380	440	400	90 – 1,850
Total Alkalinity as CaCO3	34	--	--	--	--	28 – 3,600
TDS	2,170	2,160	--	1,470	1,250	466 – 5,640
pH (units)	--	--	--	--	--	7 – 8.6

Notes:
a - Metals data reported from the unfiltered ("total") sample (turbidity at the time of sampling <10NTU).
b - Water quality data for all wells in the Project vicinity are from available information in online databases and historic reports, a summary of which is provided in Appendix J of the AFC. Source: USGS 2009; as cited in BLM 2010.
c - mg/L – milligrams per liter
d - no data reported in available online databases or historic documents
Source: AECOM 2011.

In general, based on available water quality data from the area, groundwater would not meet drinking water quality primary or secondary standards for domestic supply without treatment given the elevated levels of TDS and high concentrations of fluoride, chloride, boron, and sulfate. The data show that generally, TDS and sulfate concentrations were higher with increasing distance from the Colorado River, with the highest concentrations occurring in the area of McCoy Wash and the gap between the PVMGB and CVGB. Fluoride, chloride, and boron concentrations were generally lower in the eastern portions of the PVMGB (closer to the Colorado River) and increased westward. The much higher TDS concentrations below the Palo Verde Mesa reflect recharge of high TDS water to the PVMGB from percolation along the mountain front and underflow from Rice and Chuckwalla valleys.

The U.S. Geological Survey (USGS) sampled groundwater wells throughout the Colorado River Study Unit in 2007 as part of the Priority Basin Project of the California State Water Resources Control Board. The purpose of the study was to assess the quality of raw groundwater used for water supplies in the region. Samples were collected from 28 wells on a regular grid spacing in three study areas, including 15 wells in the Palo Verde Valley and Palo Verde Mesa area. The closest well, COLOR-09, was in the Palo Verde Valley approximately two miles from the Project area. There was no construction information available on this well, so the source of the water is not known. Most wells sampled, including COLOR-09, had specific conductance that exceeded the upper threshold value of the California Department of Public Health secondary maximum contaminant level. No volatile organic compounds, pesticides, contaminants of special interest (such as perchlorate) were detected in well COLOR-09. Concentrations of chloride and fluoride in COLOR-09 exceeded the recommended secondary maximum contaminant level. No other nutrients, metals, or ions exceeded secondary maximum contaminant levels in COLOR-09 (Goldrath et. al. 2009).

There is no site-specific information on groundwater quality. As discussed in Section 3.9.1.1, the Phase I Environmental Site Assessment (ESA) identified two suspected groundwater supply wells, which were observed to be open and unsecured. Unsecured wells can act as conduits for

surface-based contamination or wastes to enter groundwater aquifers. There have been no subsequent response actions, including securing of the groundwater wells or sampling of environmental media, to verify whether site contamination currently exists.

Groundwater Wells

Over 580 water supply wells were identified in online databases in the PVMGB (AECOM 2011). A field survey of wells in the Project vicinity conducted by AECOM (2009) encountered no active water supply wells. Nine out of 13 wells within one mile of the site were found to be accessible. All of these wells had been used for irrigation supply, but because no sources of electrical power for pumps (i.e., power lines and generators) were observed at any of these wells, it was presumed that these nine wells were inactive. The remaining four wells were reported to be not accessible, and therefore their status could not be determined (AECOM 2009). Available information for water supply wells located in the area is summarized in Table 3.20-3. Water level data were updated by AECOM (2011) to include 2010 data. Only two wells indicated new data available during this period.

Table 3.20-3. Characteristics of Nearby Wells

State Well Number	Surface Elevation (ft amsl)	Total Depth (ft bgs)	Distance from Proposed Production Well (feet)	Specific Capacity (gpm/ft)
6/21E-25L01	400.2	--	25,000	--
6/22E-08J01	408	302	135,000	35.56-64.80
6/22E-17B01	399.64	302	135,000	25.00-30.60
6/22E-17L01	400	445	15,000	37.88-54.90
6/22E-17L02	397	323	15,500	42.73-56.90
6/22E-18A01	406.88	298	13,000	30.19-35.14
6/22E-18J01	408	302	14,000	32.43-34.62
6/22E-19N02	397	300	20,000	--
6/22E-19N03	397.2	394	20,000	--
6/22E-19R01	395.6	300	21,000	--

Source: Derived from AECOM 2009; AECOM 2011, as cited in BLM 2012b.

3.20.1.2 Surface Water Hydrology and Water Quality

Surface Water Flow

The surface water flow conditions of the Project area are described in the Applicant's Drainage Report (TLA Engineering and Planning 2011), provided as Appendix V. The dominant surface water feature in the region is the Colorado River, which is located approximately 11 miles to the east of the Project site. No perennial water bodies are located on the Project site itself.

A topographic map of the Project area is shown in Figure 2-7, and a more detailed view of the Project site is shown in Figure 2-8. The Project area consists of two distinct types of topography which affect site drainage. The northwestern portion of the Project area, comprising approximately half of the overall Project site, is part of an alluvial fan which slopes in a southeastward direction from the McCoy Mountains, which are located to the northwest. This

drainage area is 3,343 acres in size, and ranges in elevation from 1670 feet at the northwest corner to 470 feet at its southwest corner, at the I-10 bridge crossing. The I-10 highway crosses this alluvial fan in between the mountains and the Project site, so the natural flow of the alluvial fan is interrupted, passes through concentrated channels underneath a highway bridge, and then becomes dispersed again as it continues its route across the alluvial fan between I-10 and the Project site. The southeastern portion of the site is a flat plateau, part of the Palo Verde Mesa. This source of drainage for this area is the Mule Mountains, which drain into the alluvial fan area west of the Project site.

In general, surface water on the Palo Verde Mesa is limited to ephemeral and intermittent drainages leading to the Colorado River. The Mesa is topographically higher than the Palo Verde Valley to the east, which forms the 100-year floodplain of the Colorado River. Lands in this area that are not utilized for agriculture are crossed by a number of small ephemeral drainages, generally flowing from northwest to southeast toward the Colorado River, either dissipating prior to reaching the edge of the Mesa or flowing into the Palo Verde Valley. In areas used for agriculture, flow may be diverted by earthen berms or irrigation ditches. The Palo Verde Mesa receives drainage from the alluvial fan to the northwest, but also from an alluvial fan system coming from the Mule Mountains to the southwest of the Project area. The ground surface in this area is characterized by a series of depressions in which surface water can pool. A drainage divide crosses from north to south through the eastern portion of the Project area. The depressions west of this divide drain surface water to the west and southwest, meeting the flow from the Mule Mountains and eventually draining off of the mesa to the southeast, towards the Colorado River. The depressions to the east of this divide drain directly to the east, towards the Colorado River.

The total drainage area of the alluvial fan consists of 14,847 offsite acres and 5,310 Project onsite acres for a total of 20,157 acres. The study area ranges in elevation from the 525 feet at its highest to a lowest elevation of 320-feet near the southeast side of the Project area. The straight line length between these elevations is approximately 6.92-miles and yields a slope of 0.0056 feet/foot.

The Applicant evaluated existing stormwater flows on the Project site, using the primary drainage criteria and methods following the Riverside County Hydrology Manual. The Applicant used U.S. Army Corps of Engineers HEC-1 modeling software to determine the mountain shed runoff hydrographs, and FLO-2D modeling software to determine the alluvial fan rainfall, flow depths, velocities, and sediment transport. Current stormwater flows have relatively shallow depths and low velocities due to the flat terrain. The majority of the Project site experiences flow depths less than six inches, and flow velocities less than half a foot per second.

Jurisdictional Waters

During large storm events, the ephemeral streams and washes in the Project area flow southeast across the Mesa and into the canal and drain system of the Palo Verde Valley. From this system, stormwater eventually flows into the Colorado River, which is a Traditional Navigable Water of the United States. Tributaries that drain into the Colorado River are likewise considered Waters of the United States, as defined in Section 404 CWA.

The Applicant conducted a delineation of wetlands and other waters at the Project site in 2014. The delineation consisted of field reconnaissance, as well as review of maps, aerial photographs,

and soil resources reports. No areas were found which met the technical criteria for wetlands. Physical characteristics of water flow, including water marks, sediment deposits, drift deposits, and a distinctive border between vegetated and unvegetated areas were identified, and were considered potentially jurisdictional waters. Mapping indicated the presence of approximately 40,000 linear feet of ephemeral riverine intermittent streambed, and 1,500 linear feet of excavated ephemeral riverine intermittent streambed. These streambeds were not identified as navigable waters, and are not used to transport interstate or foreign commerce. In addition, the streambeds were also found to lack a surface hydrologic connection to a Traditional Navigable Water, and do not meet the requirements for jurisdictional isolated waters (Huffman-Broadway 2017). The results of the delineation were submitted to the U.S. Army Corps of Engineers, which determined that the Project area does not contain waters of the United States in a letter on February 18, 2016. The letter is attached to the Federal Jurisdictional Delineation provided in Appendix I.

Landscape features that potentially meet the definition of stream in 14 CCR Section 1.72 were identified, and may be jurisdictional streams under the jurisdiction of the California Department of Fish and Wildlife (CDFW). The areas which may be subject to CDFW jurisdiction are presented in Table 3.3-4. The results of the delineation, when finalized for the chosen alternative, will be submitted to CDFW for review.

Surface Water Quality

Surface water quality is the physical, chemical, and biological characteristics of water, when assessed according to standards related to ecosystem health, the safety of drinking water, and the safety of human contact. The State of California Water Resources Control Board (SWRCB) and the nine RWQCBs are responsible for setting policies and developing regulations for the implementation of water quality control programs mandated by Federal and state water quality statutes and regulations. Water Quality Control Plans, developed and implemented by the RWQCBs, consider regional beneficial uses, water quality characteristics, and water quality problems.

The Project site lies within the East Colorado River Basin Planning Area of the Water Quality Control Plan for the Colorado River Regional Water Quality Control Board (RWQCB). The Water Quality Control Plan (RWCQB 2017) describes surface and groundwater quality objectives for the Planning Area; the objectives were established to protect the existing and potential beneficial uses of surface and groundwater in the region. Beneficial are reasonable uses of a water body as specified in the Water Quality Control Plan, and may include existing, proposed, or intermittent uses. Beneficial uses for water bodies in the Project area are listed in Table 3.20-4, and include the following: Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Aquaculture (AQUA), Industrial Service Supply (IND), Ground Water Recharge (GWR), Water Contact Recreation (REC-1), Non-Contact Water Recreation (REC-2), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Hydropower Generation (POW), and Preservation of Rare, Threatened, or Endangered Species (RARE).

Table 3.20-4. Beneficial Uses of Surface Waters in the Project Area

	MUN	AGR	AQUA	IND	GWR	REC-1	REC-2	WARM	WILD	POW	RARE
Colorado River and associated lakes and reservoirs	E	E	E	E	E	E	E	E	E	E	E
Palo Verde Valley Canals	P	E	E		E	E	E	E	E		
Palo Verde Drains						E	E	E	E		
Palo Verde Lagoon and Outfall drain						E	E	E	E		E
Washes (Ephemeral Streams)					I		I	C	I		

Source: Adapted from the Water Quality Control Plan for the Colorado River Basin – Region 7 (RWQCB 2017).
E – Existing use
P – Potential Use
I – Intermittent Use
C – Conditional use, to be determined on a case-by-case basis

Under Section 303(d) of the Clean Water Act (CWA), states, territories, and authorized Tribes are required to develop a list of surface waters with impaired water quality. These waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for surface waters on the lists and develop action plans that establish targets known as Total Maximum Daily Loads (TMDLs) to improve water quality.

The current Section 303(d) List of Impaired Waters is the 2014-2016 list, which was approved by the United States Environmental Protection Agency (USEPA) on June 6, 2017. Within the Project region, the only water body listed as impaired is the Palo Verde Outfall Drain and Lagoon. This feature, which is 18 miles long and located approximately 5 miles southeast and downstream of the Project site, is listed as impaired by chloride, dichlorodiphenyltrichloroethane (DDT), Indicator Bacteria, and toxaphene, all from unknown sources (SWRCB 2018).

3.21 Wildland Fire Ecology

The study area for Wildland Fire Ecology constitutes an area approximately one mile larger than the periphery of the Project site boundary, capturing the greatest extent of any likely wildfires near the Project. Fire risk in the study area is low, with most fires in the NECO Plan area caused by lightning or vehicles (BLM 2002).

3.21.1 Environmental Setting

The behavior and characteristics of wildfires are dependent on a number of biophysical and anthropogenic (human-caused) factors. The biophysical variables are fuels (including composition, cover, and moisture content), weather conditions (particularly wind velocity and humidity), topography (slope and aspect), and ignition sources (e.g., lightning). The anthropogenic variables are ignitions (e.g., arson, smoking, and power lines) and management (wildfire prevention and suppression efforts).

Vegetation with low moisture content is more susceptible to ignitions and burns more readily than vegetation with higher moisture content. Grasses tend to ignite more easily and burn faster, but tend to burn for a shorter duration than woody vegetation such as shrubs and trees. Continuity of fuels helps sustain wildland fires. Dense vegetation tends to carry a fire farther than patchy vegetation. The presence of invasive annual grasses, however, can provide fuel connectivity in patchy desert shrublands that would otherwise provide inconsistent fuel for a wildland fire. High winds provide oxygen to wildfires and can also blow glowing embers off burning vegetation to areas far ahead of the front of a fire, allowing fires to jump fuelbreaks in some cases. Conditions of low relative humidity will dry out fuels, increasing the likelihood of ignition. Finally, steep slopes and slopes with exposure to wind will carry fires rapidly uphill, and fires that are extinguished in mountainous areas are often contained along ridgelines.

Larrea tridentata and *Larrea tridentata-Ambrosia dumosa* shrublands are the dominant plant alliances covering almost the entire Project area, except for two small areas of *Parkinsonia florida - Olneya tesota* on the northern perimeter of the area. Major threats to these community types include fire, grazing, OHV use, and invasive species. These vegetation types are not fire-adapted. Fire, particularly repeated wildfire, is deleterious to these plant communities and tends to deplete the native woody shrubs that characterize and dominate these communities in favor of exotic weedy annuals.

Compared to other parts of the state, there are relatively few fires in the NECO Plan area and most are small. Between 1980 and 1995, a handful of fires burned a total of about 6,000 acres, all outside the study area (BLM 2002). The potential for wildfire on the Project site is limited, due to the sparse vegetation. The locations of fire ignitions near the Project area between 1990 and 2016 are shown in Figure 3.21-1. This map shows that 21 out of the 31 ignitions since 1990 occurred along Interstate 10, and 6 others occurred along publicly accessible rural roads or near private/BLM land boundaries. This suggests that most ignitions are associated with motorized vehicle use. There are no reports of fires having previously occurred on the Project site.

BLM and the National Park Service (NPS) have collaborated in the development of the *Fire Management Activity Plan (FMAP) for the California Desert* (1996) which brings together fire management goals for biological resources, wilderness, and other sources. The FMAP

establishes fire management standards and prevention and protection programs as well as limitations on fire suppression methods in critical habitat and other Mojave desert tortoise habitat designed to limit habitat disturbance while keeping fires small (BLM 2002).

Exotic and invasive weedy annual plants such as Mediterranean grass (*Schismus barbatus*) and red brome (*Bromus madritensis*) completely occupy ground cover in some areas of the NECO Plan area, where disturbances such as livestock grazing, off highway vehicle (OHV) use, development and fire have contributed to the spread of exotic annuals by displacing native annual and perennial grasses and forbs (Brooks 1998; Malo and Suarez 1995 as cited in BLM 2002). The Project site has not been the location of grazing, substantial OHV use, or development, so is not expected to present a substantial risk of fire. Plant inventories have not detected red brome at the Project site.

Fire Hazard Severity Zones (FHSZs) are areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors that have been mapped by CAL FIRE. FHSZs are ranked from moderate to very high and are categorized for fire protection as within a Federal responsibility area (FRA) under the jurisdiction of a Federal agency, within a state responsibility area (SRA) under the jurisdiction of CAL FIRE, or within a local responsibility area (LRA) under the jurisdiction of a local agency. The Project area is located in a FRA under the jurisdiction of BLM, with the exception of the 160 acre private land parcel, which is in an LRA under the jurisdiction of the RCFD. The BLM would be first responder for wildland fires and the County for structures. Both the FRA and LRA portions of the Project area are designated as within a moderate FHSZ (CAL FIRE 2016).

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This chapter assesses environmental consequences or impacts that would result from the implementation of the Proposed Action or the alternatives described in Chapter 2, *Proposed Action and Alternatives*. The scope of the impact analyses presented in this chapter is commensurate with the level of detail for the alternatives provided in Chapter 2, and the availability and/or quality of data necessary to assess impacts. Baseline conditions for assessing the potential environmental impacts are described in Chapter 3, *Affected Environment*.

The impact assessment that follows focuses on the general impacts that could occur as a result of implementing each of the alternatives. The methodology for this assessment conforms to the guidance found in the following sections of the CEQ regulations for implementing NEPA: 40 CFR §1502.24, *Methodology and Scientific Accuracy*; 40 CFR §1508.7, *Cumulative Impact*; and 40 CFR §1508.8, *Effects*. The CEQ regulations require agencies to "rigorously explore and objectively evaluate" the impacts of the alternatives. This chapter discusses short- and long-term direct, indirect, and cumulative impacts of the Proposed Action and alternatives relative to baseline conditions using established significance criteria for each environmental resource area; identifies mitigation measures to avoid or reduce the intensity of significant and potentially significant impacts (below established thresholds where possible); and summarizes on an issue-by-issue basis the residual impacts that would remain after mitigation measures are incorporated.

For purposes of performing a CEQA-compliant analysis, the potential impacts are classified as:

- *Significant and unavoidable*: cannot be mitigated to a level that is less than significant
- *Less than significant with mitigation incorporated*: can be mitigated to a level that is less than significant
- *Less than significant*: no mitigation required
- *No impact*: no effect identified

Although NEPA allows the lead agency to approve an action regardless of whether it will have significant and unavoidable impacts, CEQA requires that a lead agency make specific findings in a statement of overriding considerations before approving a project with impacts that cannot be mitigated to a level that is less than significant. The significant and unavoidable impacts of the Project are discussed in Section 5.2 of this Draft PA/EIS/EIR.

4.1.1 Baseline

The baseline for purposes of this Draft PA/EIS/EIR is the affected environment described in Sections 3.2 through 3.21, which generally reflect conditions as they existed on or about March 6, 2015, when the BLM published a NOI announcing its intention to prepare a Draft PA/EIS, and March 15, 2015, when the County published a NOP announcing its intention to prepare a Draft EIR. The baseline is intended to reflect the pre-Project environmental conditions to which the potential impacts of the Proposed Action (Project) and alternatives are compared in Sections 4.2 through 4.21.

4.1.2 Analytical Assumptions

The impacts analyses contained within this chapter were conducted using the following assumptions:

1. The laws, regulations, and policies applicable to BLM authorizing ROW grants for renewable energy development facilities would be applied consistently for all action alternatives.
2. The proposed facility would be constructed, operated, maintained, and decommissioned as described in each action alternative including the implementation of APMs (see Section 2.3.7).
3. Short-term impacts are those expected to occur during the construction phase and the first years of the operation and maintenance. Long-term impacts are those that would occur after the first five years of operation.

4.1.3 Types of Effects

The potential impacts from those actions that would have direct, indirect, and cumulative effects were considered for each resource. The terms "effects" and "impacts" as used in this document are synonymous and could be beneficial or detrimental.

4.1.4 Resources and Uses Not Affected or Present in the Action Area

The resources, BLM program areas, or other aspects of the human environment that were determined by the BLM as not affected or not present in the Project area include: wild and scenic rivers; national scenic or historic trails, monuments, recreation areas, or conservation areas; cooperative management and protection areas; outstanding natural areas; forest reserves; wetlands; livestock grazing; and wild horses and burros.

4.1.5 Cumulative Scenario Approach

Under NEPA, cumulative effects are defined as the impact on the environmental that results from the incremental impact of the Proposed Action or an alternative when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR § 1508.7). Similarly under CEQA, CEQA defines a cumulative effect as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (14 CCR § 15355). This Draft PA/EIS/EIR analyzes the cumulative effects of the construction, operation and maintenance, closure, and decommissioning of the Project within the ROW grant application area and all other elements of the Proposed Action, taking into account the effects of other past, present, and reasonably foreseeable future actions. The cumulative effects analysis considers past actions that are related either in time or space (i.e., temporally or in geographic proximity) to the proposed action; present actions that are ongoing at the same time the Draft PA/EIS/EIR was being prepared; and reasonably foreseeable future actions, limited to those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends.

Varying degrees of information exist about projects within the cumulative scenario. Therefore, for resource areas for which quantitative information is available, a quantitative analysis is provided; however, if said level of detail is not available, a qualitative analysis is provided. Because cumulative effects are defined as the incremental impact of a Proposed Action or an alternative, the Draft PA/EIS/EIR does not analyze potential cumulative effects on a resource if the Proposed Action or alternatives would have no direct or indirect effects on that resource. See, for example, Section 4.1.4, *Resources and Uses Not Affected or Present in the Action Area.*

The cumulative scenario includes projects identified in Table 4.1-1. Table 4.1-1 identifies each resource or BLM program, the cumulative analysis impacts area (which is the geographic scope for each cumulative effects issue), issues to consider (as limited by the timeframes within which the Project could cause an effect), and which renewable projects and other known actions or activities are located or would occur within the cumulative analysis impacts area. Tables 4.1-1 and 4.1-2 identify existing and reasonably foreseeable future projects within the geographic scope of the cumulative analysis. These projects are shown in Figure 4.1-1.

4.1.5.1 NEPA Requirements for Cumulative Impact Analysis

The approach to the cumulative effects analysis follows the principles outlined in the CEQ's Considering Cumulative Impacts (1997), which are listed below.

1. Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions.
2. Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who (Federal, non-Federal, or private) has taken the action.
3. Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.
4. It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.
5. Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.
6. Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects.
7. Cumulative effects may last for many years beyond the life of the action that caused the effects.
8. Each affected resource, ecosystem, and human community must be analyzed in terms of its capacity to accommodate additional effects, based on its own time and space parameters.

Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

The BLM NEPA Handbook outlines the following elements to be considered for each cumulative effect issue:

- Describe the existing condition. The existing condition is the combination of the natural condition and the effects of past actions. The natural condition is the naturally occurring resource condition without the effects of human actions. Detailed description of the natural condition may not be possible for some resources because of incomplete or unavailable information or may not be applicable for some resources. Described the effects of past actions, either individually or collectively, to understand how the existing condition has been created.
- Describe the effects of other present actions.
- Describe the effects of reasonably foreseeable actions.
- Describe the effects of the proposed action and each action alternative.
- Describe the interaction among the above effects.
- Describe the relationship of the cumulative effects to any thresholds.

4.1.5.2 CEQA Requirements for Cumulative Impact Analysis

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the proposed Project. According to state CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (as defined by Section 15130). As defined in state CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impact occurs from:

> *. . . the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

In addition, state CEQA Guidelines Section 15130(b) identifies that the following three elements are necessary for an adequate cumulative analysis:

1) Either:

- a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or
- a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

2) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available;

3) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Cumulative Impact Approach

This Draft PA/EIS/EIR evaluates cumulative impacts of the proposed Project and alternatives for each resource area, using the following steps:

1. Define the geographic and temporal scope of cumulative impact analysis for each discipline, based on the potential area within which impacts of the proposed Project could combine with those of other projects to result in significant cumulative impacts.
2. Evaluate the effects of the proposed Project in combination with past and present (existing) projects in the study area.
3. Evaluate the effects of the proposed Project with foreseeable future projects that occur within the area of geographic effect defined for each discipline.

The specific area for cumulative effect differs according to the resource under consideration. For each resource, the geographic scope of analysis in the Draft PA/EIS/EIR is based on the natural boundaries and physical conditions relevant to the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects often extends beyond the scope of the direct effects, but not beyond the scope of the direct and indirect effects of the Proposed Action and alternatives. Table 4.1-1 identifies the relevant geographic scope for each resource's analysis of cumulative impacts.

In addition, each project in a region would have its own implementation schedule, which may or may not coincide or overlap with the Proposed Action's schedule. This can impact the conclusions related to short-term impacts from activities such as construction of the Project. To be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the Project.

4.1.5.3 Known Actions and Activities in the Cumulative Scenario

Existing actions and activities within the cumulative impact analysis area (including existing BLM-authorized actions) are identified in Table 4.1-2. Reasonably foreseeable future projects within the cumulative impact analysis area are identified in Table 4.1-3.

4.1.5.4 Renewable Energy Projects Included in the Cumulative Scenario

A large number of renewable projects have been proposed on BLM-managed land, state land, and private land in California. As of April, 2016, there were 47 renewable projects approved, or in various stages of the environmental review process or under construction, in California. Solar, wind, and geothermal development applications have requested use of BLM land, including approximately one million acres of the California desert. State and private lands have also been targeted for renewable energy projects.

Table 4.1-1. Cumulative Scenario

Resource Or BLM Program	Cumulative Analysis Impact Area	Issues To Consider	BLM Renewable Energy Projects	Other Known Actions And Activities
Air Resources	MDAB	$PM_{2.5}$, PM_{10}, ozone	All projects	All projects
Biological Resources - Wildlife	Recovery Plan Area defined by NECO; Critical Habitat Unit defined by USFWS/CDFW; existing range or eastern Riverside County	Species include Mojave desert tortoise, Mojave fringe-toed lizard, migratory birds, golden eagle, western burrowing owl, American badger, kit fox, Desert big horn sheep. Impacts include mortality and injury; special status wildlife; wildlife movement; and indirect impacts, including from lighting, collisions, climate change, and stressors and potential changes to sand dune systems.	All projects	All California projects
Biological Resources – Vegetation	NECO Plan area	Ephemerally flowing drainages and natural communities; special status plants including plants protected under the California Desert Native Plants Act; microphyll woodlands; sand dunes; spread of invasive plants; mortality of plants, loss of forage and cover; changes to the vegetation alliances	All projects	All California projects
Cultural Resources	Cultural sites, traditional use areas, and cultural landscapes on the plant site, along the linear facilities corridor and in the APE.	Ground-disturbing activities and the adverse effects on historic properties, as discussed in 36CFR800.5[a][2]). Cultural resources, including archaeological (prehistoric and historic), and ethnographic resources.	All projects	All projects
Geology and Soils	Project site and linear facilities corridor for geologic hazards. Watershed for soil erosion impacts.	Accelerated and/or environmentally harmful soil erosion from water and wind; and land subsidence.	RE Crimson Solar Project, MSEP, Modified BSPP	NRG Blythe PV Project, BMSP, Interstate 10, DPV1, West-wide Section 368 Energy Corridor, DPV2, CRSS, Desert Southwest Transmission Line, and Ten West Link Transmission Line.

Table 4.1-1. Cumulative Scenario

Resource Or BLM Program	Cumulative Analysis Impact Area	Issues To Consider	BLM Renewable Energy Projects	Other Known Actions And Activities
Greenhouse Gases and Climate Change	International, national, and regional	Emission of CO_2e, global climate change impacts on Project.	All projects	All projects
Hazards and Hazardous Materials	One mile radius of Project site for hazardous materials impacts and the Blythe Airport Influence Area for aircraft safety hazards.	Releases, spills, emissions, bacteria; airborne fungi (valley fever); ground disturbance that exposes existing subsurface conditions; engineering and administrative controls; health risks from dust; Site access; fire response; hazardous materials response; advanced life support/paramedic services; disaster preparedness	RE Crimson Solar Project, MSEP, Modified BSPP	NRG Blythe PV Project, BMSP, DPV1, West-wide Section 368 Energy Corridor, DPV2, CRSS, Desert Southwest Transmission Line, and Ten West Link Transmission Line.
Lands and Realty	Project site and linear facilities corridor; CDCA Plan areas bearing the multiple use class designation "Moderate"	Designated utility corridors (e.g., transmission lines, cellular telephone towers, poles), existing ROWs, I-10; restriction or preclusion of otherwise allowable use opportunities	Palen Solar Project, Genesis Solar Energy Project, Desert Sunlight, Desert Harvest Project, RE Crimson Solar Project	Desert Southwest Transmission Line Project; Eagle Mountain Landfill Project, and Ten West Link Transmission Line.
Mineral Resources	All areas potentially underlain by construction-grade aggregate resources	Designated aggregate resource areas, extent and availability of aggregate.	All projects	All projects
Noise	Areas within 0.5 mile of the Project	Equipment, motor vehicles	RE Crimson Solar Project	NRG Blythe PV Project, BMSP, CRSS, and CUP03602, Ten West Link Transmission Line, vehicles on nearby roads..
Paleontological Resources	Quaternary-age Geologic units within eastern Riverside County	Ground-disturbing activities; rock units with potentially high sensitivity or known paleontological resources	All projects	All projects with ground disturbance

Table 4.1-1. Cumulative Scenario

Resource Or BLM Program	Cumulative Analysis Impact Area	Issues To Consider	BLM Renewable Energy Projects	Other Known Actions And Activities
Recreation and Public Access	NECO Plan area, LTVAs, Lands with Wilderness Characteristics, OHV Routes, recreational areas within viewing or hearing distance	Dispersed recreational opportunities and experiences, LTVAs, lands with wilderness characteristics, OHV recreation opportunities, unauthorized routes	Modified BSPP, Rio Mesa Solar Electric Generating Facility, RE Crimson Solar Project, MSEP	NRG Blythe PV Project, BMSP, Desert Southwest Transmission Line Project, Eagle Mountain Landfill Project, Blythe Airport Solar Project, CRSS, CUP03602, and Ten West Link Transmission Line.
Social and Economic Setting	Social: eastern Riverside County and adjacent parts of La Paz County. Economic: Riverside County	Flow of goods and services; impacts to local infrastructure and services; ability to meet housing demand; employment/labor demand; possible positive impacts to regional economic sectors and/or adverse community impacts; severance or other tax benefits; ability of communities to absorb impacts.	Palen Solar Project, Genesis Solar Energy Project, Desert Sunlight, Desert Harvest Project, Palo Verde, Rio Mesa Solar Electric Generating Facility, RE Crimson Solar Project, MSEP, Modified BSPP	NRG Blythe PV Project, BMSP, DPV2 Transmission Line Project, CRSS, Desert Southwest Transmission Line, CUP03602, Palo Verde Mesa Solar Project, and Ten West Link Transmission Line.
Special Designations	California Desert, with emphasis on Riverside County	Land with wilderness characteristics	MSEP	None
Transportation and Traffic	Roadways which may be impacted by the Project, including local roadways and the I-10 corridor in eastern Riverside County and adjacent parts of La Paz County.	Construction traffic – materials and workers	All projects	All projects
Utilities and Service Systems	California Desert, with emphasis on Riverside County	Solid and liquid wastes	All projects	All projects

Table 4.1-1. Cumulative Scenario

Resource Or BLM Program	Cumulative Analysis Impact Area	Issues To Consider	BLM Renewable Energy Projects	Other Known Actions And Activities
Visual Resources	Locations from which the Project may be visible, including the I-10 corridor.	Project appearance/visual contrast; construction- related dust, light, glint and glare; views from key observation points	RE Crimson Solar Project, MSEP, Modified BSPP	NRG Blythe PV Project, BMSP, Blythe Airport Solar Project, CRSS, CUP03602, and Ten West Link Transmission Line.
Surface Water	Watershed	Hydrology and water quality	Rio Mesa, RE Crimson Solar Project, MSEP, Modified BSPP	NRG Blythe PV Project, BMSP, Blythe Energy Project Transmission Line, City of Blythe projects, Blythe Airport Solar I Project, DPV2, CRSS, Desert Southwest Transmission Line, Eagle Mountain Landfill Project, RCL00161R1, BGR100258, CUP03602, Palo Verde Mesa Solar Project, and Ten West Link Transmission Line.
Groundwater	PVMGB	Basin balance, groundwater availability, and water quality	RE Crimson Solar Project, MSEP, Modified BSPP	NRG Blythe PV Project
Wildland Fire Ecology	eastern Riverside County	Mortality of plants and wildlife, loss of forage and cover; changes to the vegetation alliances; spread of invasive plants; consequences of extreme weather events	All projects	NRG Blythe PV Project, BMSP, West-wide Section 368 Energy Corridors, Eagle Mountain Pumping Plant, Recreational Opportunities, Kaiser Mine, Blythe Energy Project Transmission Line, Blythe Airport Solar 1, Chuckwalla Valley Raceway, Interstate 10, Chuckwalla Valley State Prison, Ironwood State Prison, DPV1 Transmission Line, Blythe Energy Project II, DPV2 Transmission Line Project, CRSS, Desert Southwest Transmission Line, Eagle Mountain Landfill Project, and Ten West Link Transmission Line.

Table 4.1-1. Cumulative Scenario

Resource Or BLM Program	Cumulative Analysis Impact Area	Issues To Consider	BLM Renewable Energy Projects	Other Known Actions And Activities
Transmission Line Safety and Nuisance	Immediate vicinity of the proposed gen-tie line	Interference with radio-frequency communication; noise; fire hazards; hazardous shocks; nuisance shocks; and EMF exposure	All projects	DPV1Transmission Line, Blythe Energy Project Transmission Line, DPV2 Transmission Line, and Desert Southwest Transmission Line, and Ten West Link Transmission Line.
Aviation Safety	Air space governed by the Blythe ALUCP	Navigable airspace; reflectivity and temporary flash occurrences; radio frequency emissions and potential interference; thermal plumes; height and location of structures; clear space within Compatibility Zone D; bird strike and avian-aviation incompatibilities	Modified BSPP, RE Crimson Solar Project, MSEP	Blythe Airport Solar 1, NRG Blythe PV Project, BMSP, Blythe Energy Project Transmission Line, DPV1 Transmission Line, Desert Southwest Transmission Line, Palo Verde Mesa Solar Project, and Ten West Link Transmission Line.

Table 4.1-2. Existing Projects Within the Cumulative Impact Analysis Area

ID#	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
1	Interstate 10	Linear project running from Santa Monica, through Blythe, and into Arizona	Caltrans	Existing	N/A	I-10 is a major east-west route for trucks delivering goods to and from California. It is a four lane divided highway in the Blythe region.
2	Chuckawalla Valley State Prison	19025 Wiley's Well Rd. Blythe, CA	CA Dept. of Corrections and Rehabilitation	Existing	1,080	State prison providing long-term housing and services for male felons classified as medium and low-medium custody inmates jointly located on 1,720 acres of state-owned property. Assessor's Parcel Numbers (APNs) 879040006, 008, 012, 027, 028, 029, 030
3	Ironwood State Prison	19005 Wiley's Well Rd. Blythe, CA	CA Dept. of Corrections and Rehabilitation	Existing	640	ISP jointly occupies with Chuckawalla Valley State Prison 1,720 acres of state-owned property, of which ISP encompasses 640 acres. The prison complex occupies approximately 350 acres with the remaining acreage used for erosion control, drainage ditches, and catch basins. APNs 879040001, 004, 009, 010, 011, 015, 016, 017, 018, 019, 020
4	Devers-Palo Verde 1 Transmission Line	From Palo Verde in Arizona to Devers Substation, San Bernardino County	Southern California Edison	Existing	N/A	Existing 500 kV transmission line parallel to I-10 from Arizona to the SCE Devers Substation, near Palm Springs.
5	West-wide Section 368 Energy Corridors	Coincident with Corridor K, along northern boundary of Project	BLM, DOE, U.S. Forest Service	Approved by BLM and U.S. Forest Service	N/A	Designation of corridors on Federal land in the 11 western states, including California, for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities (energy corridors). Corridor 30-52 passes east-west across the northern boundary of the Project site.
6	Eagle Mountain Pumping Plant	Eagle Mountain Road, west of Desert Center	Metropolitan Water District of Southern California	Existing		144 ft. pumping plant that is part of the Metropolitan Water District of Southern California's facilities. APNs 807150007, 807150009, 807150010

Table 4.1-2. Existing Projects Within the Cumulative Impact Analysis Area

ID#	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
7	Recreational Opportunities	eastern Riverside County and adjacent parts of La Paz County	BLM	Existing	N/A	BLM has numerous recreational opportunities on lands in eastern Riverside County along the I-10 corridor including the Wiley's Well Campground, Coon Hollow Campground, and multiple LTVAs.
8	Kaiser Mine	Eagle Mountain, north of Desert Center	Kaiser Ventures, Inc.	Existing		Kaiser Steel mined iron ore at Kaiser Mine in Eagle Mountain and provided much of the Pacific Coast steel in the 1950s. Mining project also included the Eagle Mountain Railroad, 51 miles long. Imported steel captured market share in the 1960s and 1970s and primary steelmaking closed in the 1980s. APN 701380031
9	Blythe Energy Project Transmission Line; 99-AFC-8C	From the Blythe Energy Project (Blythe, CA) to Julian Hinds Substation	Blythe Energy, LLC	Existing	N/A	Transmission line modifications including upgrades to Buck Substation, approximately 67.4 miles of new 230 kV transmission line between Buck Substation and Julian Hinds Substation, upgrades to the Julian Hinds Substation, installation of 6.7 miles of new 230 kV transmission line between Buck Substation and SCE's DPV 500 kV transmission line.
10	NRG Blythe PV Project	Blythe	First Solar	CPUC approved project terms of a 20 year power purchase agreement for sale of 7.5 MW, Began operations in December 2009	200	21 MW solar photovoltaic project located on 200 acres. Project was constructed by First Solar and sold to NRG Energy.
11	Chuckwalla Valley Raceway	Desert Center Airport (no longer a community airport)	Developer Matt Johnson	Existing	400	Proposed 500-mile race track located on 400 acres of land that used to belong to Riverside County and was used as the Desert Center Airport. APNs 811-142-016, 811-142-006. Small private airstrip kept as part of project. Construction completed in March 2010.

Table 4.1-2. Existing Projects Within the Cumulative Impact Analysis Area

ID#	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
12	Devers-Palo Verde 2 Transmission Line Project; CPUC Application No. A.05-04-015; CACA-048771	From the Midpoint Substation to Devers Substation (CA-only portion)	Southern California Edison	Existing	N/A	500 kV transmission line 115 miles long from the CRSS to Devers, and 41.6 miles long between the Devers Substation and SCE's Valley Substation.
13	Colorado River Substation Expansion; CPUC Application No. A.05-05-015	10 miles southwest of Blythe	Southern California Edison	Existing	90	500/230 kV substation constructed in an area approximately 1,000 feet by 1,900 feet.
14	Genesis Solar Energy Project; CACA-48880	North of I-10, 25 miles west of Blythe and 27 miles east of Desert Center	NextEra (FPL)	Existing	1.950	250 MW (two adjacent, independent solar plants with a 125 MW capacity each) solar thermal electric generating facility, using solar parabolic trough technology; includes 6-mile natural gas pipeline and 5.5-mile transmission line interconnecting Blythe Energy Center to Julian Hinds Transmission Line; on 1,950 acres. Construction completed in April, 2014.
15	Desert Sunlight; CACA-48649	North of Desert Center	Desert Sunlight Holdings, LLC	Existing	4,245	550 MW solar photovoltaic project located on 4,245 acres.
16	Red Bluff Substation CPUC 10-11-012	Adjacent to the south side on I-10, east of Aztec Road, and west of Corn Springs Road, in unincorporated Riverside County	Southern California Edison	Existing	75	500/250 kV substation, two new parallel 500 kV transmission lines of about 2,500 to 3,500 feet each looping the substation into the existing DPV 500 kV transmission line (DPV1), and two parallel 500 kV transmission lines of about 2,500 to 3,500 feet each looping the new substation into the DPV2 line.

Table 4.1-2. Existing Projects Within the Cumulative Impact Analysis Area

ID#	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
17	Blythe Solar Power Generation Station 1	6 miles north of Blythe	Blythe Solar Power Generation Station 1, LLC	Existing	29.4	4.76 MW solar PV facility; on 29.4 acres
18	McCoy Solar Energy Project (MSEP); CACA-48728	10 miles northwest of Blythe	McCoy Solar LLC	ROW Grants approved by BLM in December, 2013and August, 2014. Under construction, expected to be completed in August, 2016.	4,014	Up to a 750 MW PV solar power plant using photovoltaic technology; 16-mile-long 230 kV generation tie and switchyard that would connect to SCE's CRSS.

Table 4.1-3. Reasonably Foreseeable Projects Within the Cumulative Impact Analysis Area

ID#	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
A	Three Commercial Projects	Blythe, CA	Various	Approved	N/A	Three commercial projects have been approved by the Blythe Planning Department including the Agate Road Boat & RV Storage, Riverway Ranch Specific Plan, and Agate Senior Housing Development.
B	Intake Shell	Blythe, CA	Shell	Under Construction	N/A	Reconstruction of a Shell facility located at Intake and Hobson Way. Demolition occurred in 2008, reconstruction planned for 2009-2010.
C	Eleven Residential Developments	Blythe, CA	Various	Approved/ Under Construction	N/A	Eleven residential development projects have been approved by the Blythe Planning Department including: Van Weelden (184 SFR), Sonora South (43 SFR), Irvine Assets (107 SFR), Chanslor Village (79 SFR), St. Joseph's Investments (69 SFR), Edgewater Lane (45 SFR), Chanslor Phase II & III (78 SFR), Chanslor Place Phase IV (57 SFR), Palo Verde Oasis Phase IV (29 SFR), Mesa Bluffs Villas Phase IV (26 attached SFR), and Agate Senior Housing (81 MFR). Two of these, Chanslor Place and Mesa Bluffs Villas, ad under construction as of March, 2016.
D	Desert Southwest Transmission Line; CACA-044491	118 miles primarily parallel to DPV	Imperial Irrigation District	Approved June 2007, Plan of Development submitted 2009	N/A	118-mile 500 kV transmission line from Blythe Energy Project Substation to the existing Devers Substation. Located adjacent to SCE's existing 500 kV DPV1 transmission line.
E	Eagle Mountain Pumped Storage Project; FERC 13123-002	Eagle Mountain iron ore mine, north of Desert Center	Eagle Crest Energy Company	Final EIS published Jan. 2012.	1,524	1,300 MW pumped storage project on a 1,524 acres, designed to store off-peak energy to use during peak hours.

Table 4.1-3. Reasonably Foreseeable Projects Within the Cumulative Impact Analysis Area

ID#	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
F	Palen Solar Project (formerly Palen Solar Energy Project); CACA-048810	North of I-10, 10 miles east of Desert Center	Palen Solar III, LLC, a subsidiary of EDF Renewable Energy	Solar thermal plant approved by CEC in 2010 and BLM in 2011, but not built. Modified project proposed in 2013, but withdrawn in 2014. Revised POD for 500 MW solar PV plant submitted to BLM in December, 2015. Draft EIS issued in October 2017.	5,200	500 MW solar PV facility.
G	Blythe Airport Solar I Project	Blythe Airport	U.S. Solar	City of Blythe approved the project in November, 2009 Building Permit applied for December, 2010	640	100 MW photovoltaic (PV) power plant; 640 acres; constructed in five 20 MW phases; includes a 3,200-foot-long 33 kV generation tie.
H	Modified Blythe Solar Power Project (Modified BSPP); CACA-48811	North of I-10, immediately north of the Blythe Airport	NextEra	ROW Grant approved by BLM in August, 2014. Notice to Proceed for construction was issued March 19, 2015. Project is expected to be completed in August, 2016.	4,138	485 MW PV solar plant; 4,138 acres of BLM-administered public land.
I	Desert Harvest Project; CACA-049491	6 miles north of Desert Center	EDF Renewable Energy	BLM Record of Decision (ROD) signed on March, 13, 2013. BLM is awaiting Applicant's submittal of documentation in order to issue a Notice to Proceed with construction.	1,280	100 MW PV solar plant, 1,280 acres.

Table 4.1-3. Reasonably Foreseeable Projects Within the Cumulative Impact Analysis Area

ID#	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
J	Eagle Mountain Landfill Project; CACA-30070 CACA-25594 CACA-31926	Eagle Mountain, North of Desert Center	Mine Reclamation Corporation and Kaiser Eagle Mountain, Inc.	Land exchange for the project was not properly approved. Kaiser's Mine and Reclamation is considering all available options.	3,500	The project is proposed to be developed on a portion of the Kaiser Eagle Mountain Mine in Riverside County, California. The proposed project comprises a Class III nonhazardous municipal solid waste landfill and the renovation and repopulation of Eagle Mountain Townsite. The proposal by the proponent includes a land exchange and application for rights-of-way with the Bureau of Land Management and a Specific Plan, General Plan Amendment, Change of Zone, Development Agreement, Revised Permit to Reclamation Plan, and Tentative Tract Map with the County.
K	RCL00161R1	North of 95, east of Intake Blvd	N/A	Reclamation Plan applied for September, 2009	38	Expansion of gravel pit from 12.95 acres to 38 acres.
L	BGR100258	Ehlers Blvd and W Chanslor Way	N/A	Grading Permit applied for November, 2010	<1	Grading permit for 9000 square foot church
M	BNR100126	8 miles south of the intersection of HWY 177 and HWY 10.	U.S. Solar	Building Permit applied for December, 2010	400	49.5 MW solar PV plant (PP24754)
N	Palo Verde Mesa Solar Project	5 miles northwest of Blythe	Renewable Resources Group, Inc.	Proposed: Conditional Use Permit applied for September 2011; Public Use Permit applied for July 2012.	3,250	Up to 486 MW solar PV generating facility. The project would include a solar panel array, two on-site electrical substations, a maintenance building, and ancillary facilities. A 14.7-mile 230 kV transmission line would cross lands under County, City of Blythe, and BLM jurisdiction to connect to the CRSS.
O	Eagle Mountain; CACA-51664	Eagle Mountain, north of Desert Center	L.H. Renewables	Testing	3,500	3,500-acre wind facility with met towers.

Table 4.1-3. Reasonably Foreseeable Projects Within the Cumulative Impact Analysis Area

ID#	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
P	Rio Mesa Solar Electric Generating Facility; CACA-53138	Approximately 11 miles south west of the City of Blythe	BrightSource Energy	Notice of Intent issued September, 2012.	3,805	500 MW solar power project composed of two power plants and a common area with shared facilities. Each 250 MW solar concentration power plant would utilize a solar power boiler and solar field based on heliostat mirror technology. A new generation tie line would be constructed to connect to the new SCE CRSS.
Q	RE Crimson Solar Project (formerly Sonoran West; CACA-51967	12 miles west of Blythe	Sonoran West Holdings, a subsidiary of Recurrent Energy, LLC.	Application received	4,000	450 MW solar PV facility and 450 MW of integrated energy storage capacity.
R	Mule Mountain III; CACA-50390	15 miles southwest of Blythe	Solar Reserve	Application received August 13, 2008	8,160	150 MW power tower
S	Blythe Mesa Solar Project (BMSP)	Adjacent to east boundary of DQSP	Renewable Resources Group	BLM issued Record of Decision in August, 2015. Construction not begun as of March, 2016.	3,665	485 MW solar PV facility on private land, with gen-tie on BLM land.
T	Blythe Energy Project II	City of Blythe, north of I-10, 7 miles west of the CA/AZ border	Caithness Blythe II, LLC	Approved, but construction not begun.	76	520 MW combined-cycle natural gas-fired electric-generating facility. Project is connected to the Buck Substation owned by WAPA.
U	Ten West Link Transmission Project	Adjacent to southwestern boundary of DQSP.	DCR Transmission, LLC	Environmental review initiated in August, 2016.	N/A	114 mile proposed 500 kV transmission line from Tonopah, Arizona to CRSS.

Solar, wind, and geothermal projects are also being considered on BLM land in Nevada and Arizona. However, none of these are located in the vicinity of the Desert Quartzite Project area. The closest is the Quartzsite Solar Energy Project, located more than 30 miles northeast of the Project site, and separated from the Palo Verde Valley by the Dome Rock Mountains. Large renewable projects now described in applications to the BLM and on private land are competing for utility Power Purchase Agreements, which will allow utilities to meet state-required Renewables Portfolio Standards. Not all of the projects listed will enter the environmental review process or be approved, and not all projects will be funded and ultimately constructed.

4.1.6 Mitigation Measures Included in the Analysis

The impact analyses are based on the Applicant's description of their proposed Project, and that description includes, for some resources, Applicant-Proposed Measures (APMs). The impact analyses assume that APMs are to be implemented, and these measures are therefore requirements for approval of the Project.

For impacts identified in the following resource sections, measures have been developed to avoid or reduce potential environmental effects that would be implemented during all appropriate phases of the Project from initial ground breaking and construction, to operation and maintenance, and through closure and decommissioning. The measures include a combination of the following:

1. APMs, as specified in the Applicant's POD, management plans, and technical reports;
2. Regulatory requirements of other Federal, state, and local agencies;
3. USFWS terms and conditions identified in the BO; and
4. Additional BLM-proposed mitigation measures, ROW grant terms and conditions, and best management practices (BMPs).

These requirements generically are referred to as "mitigation measures" throughout this Draft PA/EIS/EIR. Descriptions of the proposed mitigation measures for impacts identified for each of the resources are included in Appendix G.

4.1.7 Terms and Conditions found in FLPMA and BLM ROW Regulations

Title V of FLMPA addresses the issuance of ROW authorizations on public land. The general terms and conditions applicable to all public land ROWs are described in FLPMA §505, and include measures to minimize damage and otherwise protect the environment, and requirements for compliance with air and water quality standards, as well as compliance with more stringent state standards for public health and safety, environmental protection, siting, construction, operation, and maintenance of ROWs.

The Secretary may prescribe additional terms and conditions as s/he deems necessary to protect Federal property, provide for efficient management, and among other things, generally protect the public interest in the public lands subject to or lands adjacent thereto. For this Project, additional terms and conditions will be incorporated into the ROW grant that are necessary to protect public safety, including security fencing and on-site personnel. The environmental consequences analysis in this Draft PA/EIS/EIR identifies impacts and mitigation measures to reduce or avoid impacts. The mitigation measures identified by the BLM and incorporated as

terms and conditions of the ROW grant provide those actions necessary to prevent unnecessary or undue degradation of the public lands as required by FLPMA §302. The additional mitigation measures that are identified and described in the Draft PA/EIS/EIR and that would be enforced by the other agencies, as noted above, provide additional protection to public land resources.

Finally, all BLM ROW grants are approved subject to regulations contained at 43 CFR §2800. Those regulations specify that the BLM may, at any time, change the terms and conditions of a ROW grant "as a result of changes in legislation, regulations, or as otherwise necessary to protect public health or safety or the environment" (43 CFR §2805.15(e)).

If the ROW grant is authorized, the BLM will monitor conditions and review any ROW grant stipulations and terms and conditions issued for the Project to evaluate if future changes to the grant are necessary or justified under this provision of the regulations to further minimize or reduce impacts resulting from the Project. Changes may be subject to additional NEPA analysis.

If approved, the solar energy ROW authorization would include diligent development terms and conditions, consistent with the requirements of 43 CFR §2805.12(i)(5). Failure of the holder to comply with the diligent development terms and conditions provides the BLM authorized officer (AO) the authority to suspend or terminate the authorization (43 CFR §2807.17).

If approved, the solar energy ROW authorization would include a required "Performance and Reclamation" bond to ensure compliance with the terms and conditions of the ROW authorization, consistent with the requirements of 43 CFR §2805.12(g). The "Performance and Reclamation" bond would consist of three components. The first component would be hazardous materials, the second component would be the decommissioning and removal of improvements and facilities, and the third component would address reclamation, revegetation, restoration, and soil stabilization.

4.2 Air Resources

4.2.1 Methodology for Analysis

This analysis of potential air resources-related impacts of the Proposed Action and Alternatives is based on criteria pollutant emission estimates, public health risk, and cumulative impacts that would be associated with construction, operation and maintenance, and decommissioning of the Project. The methodology and results from air emissions estimates are included in the Air Quality and Greenhouse Gas Technical Study (URS 2015, provided in Appendix W). Analyses of emissions of greenhouse gases (GHGs) are presented separately in Sections 3.8 and 4.8.

Independent of NEPA, Section 176 of the CAA requires that Federal agency activities, including licensing and permitting, within EPA-designated nonattainment or maintenance areas must comply with applicable General and Transportation Conformity Rules/Regulations. However, the study area has no nonattainment or maintenance designations for any NAAQS. Consequently, formal CAA conformity requirements do not apply to Federal agency actions related to the Proposed Action or Alternatives.

However, for the purposes of this analysis, the CAA conformity to *de minimis* levels are used as mass emissions indicators for adverse annual emissions. The CAA conformity thresholds for maintenance areas (i.e., areas that currently meet Federal air quality standards, but have violated the standards in prior years), which in the Project area are 100 tons per year per pollutant, are used in this analysis to gauge the potential for the Project and alternatives to result in an exceedance of NAAQS.

The MDAQMD has been the delegated local authority by the EPA to implement and enforce most Federal requirements that are applicable to the Project. Compliance with the MDAQMD regulations assures compliance and consistency with the corresponding Federal requirements because the MDAQMD requirements are more stringent. Project-related construction and operation and maintenance emissions are also compared to MDAQMD thresholds to determine whether the Project and alternatives could result in an exceedance of the CAAQS.

Construction Emissions

Alternative 1: Proposed Action

The primary sources of air emissions during the construction of the Project would include exhaust from heavy equipment and vehicles, as well as fugitive dust generated in areas disturbed by grading, excavating, earth moving, and the movement of various construction vehicles around the site.

Emissions from vehicles and equipment during construction would include:

- Exhaust from the off-road construction equipment, including diesel construction equipment used for site grading, excavation, and construction of on-site structures, generators, and water trucks used to control construction dust emissions.
- Exhaust from on-road construction vehicles, including diesel fuel trucks and water trucks used to transport fuel and water between the local Blythe area and the construction site, and from diesel trucks used to deliver concrete, material, equipment, and construction supplies to the construction site.

- Exhaust from vehicles used by workers to commute to the construction site.

Fugitive dust emissions from the construction of the Project would include:

- Site grading/excavation activities at the construction site.
- Installation of the 230 kV gen-tie line foundations.
- Installation of conductors along the gen-tie route.
- Installation of solar array foundation and related equipment installation.
- On-site vehicle and equipment travel on unpaved surfaces.
- Off-site travel of worker vehicles and trucks on unpaved and paved roads.

Exhaust emissions from construction equipment and vehicles were estimated using equipment lists and construction scheduling information. Mass emissions of all criteria pollutants were estimated using equipment-specific OFFROAD2011/2007 software published by the ARB. ARB's EMFAC2014 model was used to generate emission factors specific to each vehicle for criteria pollutants. For volatile organic compounds (VOCs), the model calculates an emission value for Reactive Organic Gases (ROG), which is equivalent to EPA's VOC definition.

The assumptions used in calculating emissions from Project construction included a 25-month construction period with 5 construction days per week (21 work-days per month). The weight and speed for equipment and vehicle were assumed from EMFAC/OFFROAD guidance, EPA AP-42, and other similar solar project and construction project experience. The Project-related vehicular traffic distances on offsite paved roads were measured and included in the emission estimates. All off-site road travel was assumed to be within the MDAQMD jurisdiction area.

Fugitive dust emissions resulting from on-site soil disturbances were estimated using EPA AP-42 emission factors for activities including bulldozing and dirt-pushing, travel on paved and unpaved roads, and material handling of aggregate materials. $PM_{2.5}$ emissions were scaled from factors determined using guidance from SCAQMD Final Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds (10/1/2006, Appendix A Updated CEIDARS Table with $PM_{2.5}$ Fractions) (SCAQMD 2006).

Other modeling assumptions included the number of vehicle and truck trips. The estimated construction workforce is expected to require up to 450 vehicle trips per day, with a maximum of 810 vehicle trips per day during peak construction. Approximately 14,400 truck deliveries of equipment, materials and fuel were estimated to be required over the course of the construction period. If onsite groundwater or local wells are not used, then water will be trucked into the Project site from an off-site source(s), and would potentially require up to approximately 57,000 water deliveries.

The primary hazardous air pollutant emission associated with the Project and alternatives would be Diesel Particulate Matter (DPM) emissions from heavy construction equipment. Small quantities of other hazardous air pollutants would be associated with gasoline-fueled vehicles also operating onsite during construction. The location of hazardous pollutant emissions from construction equipment operation would vary across the Project site over the construction period, and thus would not be in a fixed location for long periods of time.

The MDAQMD CEQA Guidelines state that an industrial project within 1,000 feet of a sensitive receptor must be evaluated quantitatively to determine if it would expose sensitive receptors to

substantial pollutant concentrations based on the criteria presented in the guidelines (MDAQMD 2011). Because there are no sensitive receptors within 1,000 feet of the Project site, health risks are assessed qualitatively and a full health risk assessment was not warranted for the Project.

Alternative 2: Resource Avoidance Alternative

The annual criteria pollutant emissions that would be generated within the MDAB under Alternative 2 were estimated based on the analysis developed for the Proposed Action, but scaled, where applicable, to account for differences in Project activities between Alternative 2 and the Proposed Action. The Project features which affect the calculation of emissions, include:

- Alternative 2 would involve the same peak number of construction workers as the Proposed Action, and therefore the same peak onsite and offsite emissions associated with the vehicles of commuting workers.
- Alternative 2 would involve the same peak number of onsite construction vehicles and equipment as the Proposed Action, and therefore the same peak onsite emissions associated with construction equipment.
- Alternative 2 would involve the same peak number of truck deliveries of Project components and equipment as the Proposed Action, and therefore the same peak onsite and offsite emissions associated with delivery trucks.
- Alternative 2 would involve ground disturbance of a smaller area than the Proposed Action, and therefore would result in a reduced amount of fugitive dust associated with ground disturbance. The fugitive dust emissions for the Proposed Action were based on an assumption that grading requirements would total 838,000 cubic yards. The Applicant estimates that the grading requirements for Alternative 2 would total 750,000 cubic yards, or approximately 89 percent of the Proposed Action. Therefore, the fugitive dust emissions for Alternative 2 were estimated by scaling down the fugitive dust emissions of the Proposed Action by 11 percent.

Alternative 3: Reduced Project Alternative

The annual criteria pollutant emissions that would be generated within the MDAB under Alternative 3 were estimated based on the analysis developed for the Proposed Action, but scaled, where applicable, to account for differences in Project activities between Alternative 3 and the Proposed Action. The Project features that affect the calculation of emissions, include:

- Alternative 3 would involve the same peak number of construction workers as the Proposed Action, and therefore the same peak onsite and offsite emissions associated with the vehicles of commuting workers.
- Alternative 3 would involve the same peak number of onsite construction vehicles and equipment as the Proposed Action, and therefore the same peak onsite emissions associated with construction equipment.
- Alternative 3 would involve a reduced number of truck deliveries of Project components and equipment from that of the Proposed Action. The Applicant estimates that the Proposed Action and Alternative 2 would require up to 14,400 truck deliveries, while Alternative 3 would require 10,800 deliveries, a reduction of 25 percent. Therefore, the onsite and offsite emissions associated with truck deliveries for Alternative 3 were

estimated by scaling down the vehicle dust and fugitive dust emissions of the Proposed Action by 25 percent.

- Alternative 3 would involve ground disturbance of a smaller area than the Proposed Action, and therefore would result in a reduced amount of fugitive dust associated with ground disturbance. The fugitive dust emissions for the Proposed Action were based on an assumption that grading requirements would total 838,000 cubic yards. The Applicant estimates that the grading requirements for Alternative 3 would total 670,000 cubic yards, or approximately 80 percent of the Proposed Action. Therefore, the fugitive dust emissions for Alternative 3 were estimated by scaling down the fugitive dust emissions of the Proposed Action by 20 percent.

Alternative 4: No Action Alternative
The No Action Alternative would not result in any increase in air emissions.

Operation and Maintenance Emissions

Operation-related criteria pollutant emissions, including fugitive dust, would be generated from onsite equipment and onsite and offsite vehicle use.

The workforce for operations and security purposes is estimated to be 5 full-time workers. The expected annual demand for water is approximately 38 acre feet per year (AFY). Only limited deliveries would be necessary for replacement PV modules and equipment during operations and maintenance; up to 15 daily round trips were estimated for workers and deliveries. Off-road equipment is not expected to be used during Project operations. The methodology to estimate operational emissions and construction emissions from the on-road vehicles are identical.

There would be few sources of hazardous air pollutant emissions other than limited onsite vehicle traffic at the Project site during facility operation and maintenance.

Alternatives 2 and 3 would involve the same number of operations workers and deliveries as the Proposed Action. Therefore, operations and maintenance emissions for Alternatives 2 and 3 were assumed to be the same as those of the Proposed Action.

Decommissioning Emissions

The sources of emissions from decommissioning of the Proposed Action were assumed to be similar to those associated with construction. Because the land area and number of Project components under Alternatives 2 and 3 would both be reduced from those associated with construction, the emissions associated with decommissioning of these alternatives would be reduced by approximately the scale factor as would the construction emissions.

4.2.1.1 CEQA Significance Criteria

The criteria listed below were used to determine if the Proposed Project would result in significant impacts to air quality. These criteria were obtained from the CEQA Environmental Checklist, Appendix G of the state CEQA Guidelines and from the MDAQMD CEQA Guidelines (MDAQMD 2011). The thresholds from both sources have been combined into a single set of criteria to define that a project could have potentially significant impact if it would:

AIR-1) Conflict with or obstruct implementation of the applicable air quality attainment or maintenance plan.

AIR-2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation when added to the local background. The MDAQMD significance thresholds for criteria pollutants are shown in Table 4.2-1.

AIR-3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

AIR-4) Expose sensitive receptors to substantial pollutant concentrations including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1. As defined in the MDAQMD's CEQA Guidelines, sensitive receptors include land uses associated with residences, schools, daycare centers, playgrounds, and medical facilities. The following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated using CEQA Significance Criterion AIR-4:

- Any industrial project within 1,000 feet;
- A distribution center (40 or more trucks per day) within 1,000 feet;
- A major transportation project (50,000 or more vehicles per day) within 1,000 feet;
- A dry cleaner using perchloroethylene within 500 feet; or
- A gasoline dispensing facility within 300 feet.

AIR-5) Create objectionable odors affecting a substantial number of people.

The following additional significance criteria from the County of Riverside CEQA Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

AIR-6) Expose sensitive receptors that are located within one mile of the Project site to substantial point source emissions.

AIR-7) Involve the construction of a sensitive receptor located within one mile of an existing substantial point source emitter.

Table 4.2-1. MDAQMD's CEQA Significant Emissions Thresholds

Pollutant	Annual Threshold (Tons)	Daily Threshold (Pounds)
Carbon monoxide (CO)	100	548
Oxides of nitrogen (NO_x)	25	137
Volatile organic compounds (VOC)	25	137
Oxides of sulfur (SO_x)	25	137
Particulate matter (PM_{10})	15	82
Particulate matter ($PM_{2.5}$)	15	82
Hydrogen Sulfide (H_2S)	10	54

Source: MDAQMD 2011

4.2.2 Applicant-Proposed Measures (APMs)

In their Air Quality and Greenhouse Gas Technical Study (URS 2015), the Applicant described APMs which would be implemented to reduce emissions from the Project. During construction, operations and maintenance, and decommissioning, watering of unpaved travel surfaces would occur and travel speed on unpaved surfaces would be limited to 15 miles per hour. The measure for watering at least three times per day or equivalent control, and for a speed limit of 15 miles per hour, intend to achieve a combined dust control efficiency of 83 percent (SCAQMD 2012) during temporary construction activities on unpaved surfaces at the Project site and the off-site unpaved access road (16th Avenue/Seeley Avenue) to SR-78. The assumption of an 83 percent of combined dust mitigation efficiency from watering and limiting speeds to 15 miles per hour was also used for estimating emissions from bulldozing, grading, dirt piling, and material handling activities. All dust emissions from travelling on paved roads off-site was assumed to be non-mitigated, for the purposes of estimating the emissions. The Applicant may achieve required control efficiency through application of dust suppressants, consistent with applicable regulations.

In addition, as described in Section 2.3.7.6, the Applicant has developed a preliminary summary of a Dust Control Plan to control fugitive dust emissions during Project construction. Prior to the Notice to Proceed, the Dust Control Plan would be developed in conformance with requirements of the MDAQMD Rule 403.2, Fugitive Dust Control for the Mojave Desert Planning Area. The Plan would include requirements such as use of water or dust suppressants on dirt roads and graded areas, speed limits for vehicles, covers for vehicles transporting soil, and cleaning and maintaining vehicles and equipment. Dust control measures and BMPs would include limiting ground disturbance and vegetation removal to the extent practicable; using water on unpaved areas and stockpiles; stabilizing inactive surfaces and stockpiles with soil binders or dust palliatives; covering stockpiles during windy conditions; using gravel at key locations on roads to prevent track-out; covering bulk material on trucks; maintain 15 mile per hour speed limits for loaded vehicles on public and private earthen or gravel roads; and suspending grading activities during periods of high wind.

The emission estimates for Project construction and emissions assumed that the APMs and the Dust Control Plan described above would be implemented as part of the Project.

As discussed in Section 4.1.6, the impact analysis assumes that the APMs have been implemented, and these measures are therefore requirements for approval of the Project. The APMs are to be incorporated into the EICMPP/MMRCP, along with the agency-required mitigation measures.

4.2.3 Direct and Indirect Impacts

4.2.3.1 Alternative 1: Proposed Action

Construction

Criteria Pollutant Emissions

Project construction would generate emissions of criteria pollutants through direct emissions from construction-related vehicles, as well as fugitive dust emissions. In general, ground disturbance associated with construction acts to increase fugitive dust emissions by removing stabilizing vegetation and crusts. Dusts are emitted immediately as construction vehicles

traverse soils. Dusts are also emitted after construction vehicles have left an area, because once surficial vegetation and crusts are removed, exposed soils are unprotected and become vulnerable to both wind and water erosion. Two methods to reduce fugitive dusts associated with construction are 1) to minimize the amount of soil disturbance that occurs by reducing grading and vegetation removal to the maximum extent practicable, and 2) to stabilize areas that have been disturbed.

Tables 4.2-2 and 4.2-3 summarize the worst-case daily and annual construction air emissions. Table 4.2-2 compares the maximum daily construction emissions with the applicable MDAQMD thresholds of significance, while Table 4.2-3 compares the maximum annual construction emissions with the MDAQMD thresholds of significance. The emissions estimates in Tables 4.2-2 and 4.2-3 show that the emissions associated with Project construction activities would exceed applicable MDAQMD daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$ emissions, resulting in an adverse effect. The onsite PM_{10} and $PM_{2.5}$ emissions estimates account for reductions from the APMs (application of watering and speed limit of 15 miles per hour on unpaved travel surfaces). The analysis assumes that the control efficiency associated with the Applicant proposed dust control measures would be 83 percent.

The vast majority of Project-related PM_{10} and $PM_{2.5}$ emissions (approximately 88 percent) are not generated onsite, but are generated by worker vehicles and delivery trucks traversing the unpaved, 5.6-mile long segment of 16th Avenue/Seeley Avenue between the site entrance and the beginning of pavement near SR-78. Mitigation Measure TRN-4 would require that the Applicant pave this segment, a length of approximately 5.6 miles, prior to beginning any other construction activities at the Project area. This measure would reduce emissions of PM_{10} and $PM_{2.5}$ during construction substantially.

As shown in Table 4.2-3, the annual emissions for all pollutants would be below the respective annual *de minimis* levels (below 100 tons/year), except for PM_{10}, which would exceed the *de minimis* level. The projected exceedance of the PM_{10} MDAQMD annual emissions threshold would also contribute to the non-attainment for PM_{10} in the area under CAAQS. The magnitude of the exceedance of the *de minimis* level and the MDAQMD annual threshold would be substantially reduced by paving of the access road under Mitigation Measure TRN-4. However, exceedance of the *de minimis* level and the MDAQMD annual threshold would still occur.

Implementation of mitigation measures AQ-1 (dust control plan), AQ-2 (protect the stability of desert pavement areas), and TRN-4 (paving of the access road) would minimize air quality impacts to the extent feasible, particularly related to emissions of $PM_{2.5}$ and PM_{10}. MDAQMD Rule 403.2 requires that soil stabilizers be used on exposed surfaces to reduce fugitive dust emissions. Even with these mitigation measures, the PM_{10} emissions during construction would exceed the MDAQMD regional significance threshold of 82 pounds/day. The exceedance of the MDAQMD thresholds and the annual *de minimis* level would be temporary, occurring only during the 25 month construction period. Upon completion of construction, these emissions would cease.

Table 4.2-2. Proposed Action Construction Daily Emission Estimations (Pounds/Day)

Daily Emissions (Pounds Per Day)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	279.93	14.37	294.30	32.95	13.22	46.17	271.61	0.50	158.55	24.86
Off-site emissions	2,539.00	2.90	2,541.91	261.26	2.76	264.02	151.38	0.85	342.55	19.75
Total	2,818.94	17.27	2,836.21	294.21	15.98	310.19	422.99	1.35	501.10	44.61
MDAQMD CEQA daily threshold	NA	NA	82	NA	NA	82	137	137	548	137
Exceed the threshold (Yes/No)	NA	NA	Yes	NA	NA	Yes	Yes	No	No	No

Note: NA = Not Applicable.

Table 4.2-3. Proposed Action Construction Annual Emission Estimations (Tons/Year)

Annual Emissions (Tons per Year)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	31.05	1.62	32.67	3.68	1.49	5.17	30.19	0.06	17.96	2.80
Off-site emissions	266.97	0.29	267.26	27.47	0.27	27.75	15.00	0.09	37.13	2.05
Total	298.02	1.91	299.92	31.15	1.76	32.91	45.19	0.15	55.09	4.86
de minimis level	NA	NA	100	NA	NA	100	100	100	100	100
MDAQMD CEQA annual threshold	NA	NA	15	NA	NA	15	25	25	100	25
Exceed the threshold (Yes/No)	NA	NA	Yes	NA	NA	Yes	Yes	No	No	No

Note: NA = Not Applicable.

Toxic Air Contaminants

Emissions of hazardous air pollutants (air toxics) are limited for construction of solar PV generating facilities, and from a health risk perspective are primarily associated with the emissions of DPM. DPM would be emitted from construction equipment and diesel fueled construction vehicles. MDAQMD requirements for health risk assessments categorize project sites by land use type and define the distance from the project site within which sensitive receptors must be considered for increased health risk. The worst case potential impact radius is associated with "Any industrial project" which requires that sensitive receptors within 1,000 feet of the project be considered. Though solar projects are not specifically identified in the categories, this worst case radius was assumed as the criterion for determining potential risks from exposure to DPM during construction. Using the associated definition of sensitive receptors, which include residences, schools, daycare centers, playgrounds, and medical facilities, it was determined that there would be little risk from exposure to DPM during

construction because the closest sensitive receptor is located approximately 3,700 feet from the Project area.

Odors

Construction equipment may create mildly objectionable odors. The specific potential minor odor sources during construction would include equipment and construction vehicle exhausts. The impact is not expected to be substantial, because construction activities would be intermittent and spatially dispersed, and because the closest sensitive receptor is located approximately 3,700 feet from the Project area.

Operation and Maintenance

Operation of the Project would result in substantially lower emissions than Project construction, since the Project would not have any major stationary emission sources. Annual emission estimates for operation of all of the action alternatives are shown in Table 4.2-4. The emission estimates in Table 4.2-4 show that emissions from operation of the Project would all be below MDAQMD thresholds and *de minimis* levels. Impacts associated with operation and maintenance of the Project would not be expected to result in or contribute to an exceedance of a NAAQS or CAAQS.

Table 4.2-4. Operational Annual Emission Estimations for All Action Alternatives (Tons/Year)

Annual Emissions (Tons per Year)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	0.16	0.00	0.16	0.02	0.0001	0.02	0.01	0.00001	0.0019	0.0004
Off-site emissions	9.02	0.03	9.04	0.93	0.02	0.96	1.26	0.003	0.61	0.09
Total	9.17	0.03	9.20	0.95	0.02	0.97	1.26	0.003	0.61	0.09
de minimis level	NA	NA	100	NA	NA	100	100	100	100	100
MDAQMD CEQA annual threshold	NA	NA	15	NA	NA	15	25	25	100	25
Exceed the threshold (Yes/No)	NA	NA	No	NA	NA	No	No	No	No	No

Note: NA = Not Applicable.

Sources of DPM emissions during operation include trucks and maintenance equipment, such as diesel fueled vehicles. DPM emissions during operation would be very limited. Due to the negligible amount of emissions that would be generated during operation and maintenance of the Project, and because the closest sensitive receptor is located approximately 3,700 feet from the Project area, the risk from exposure to DPM during Project operation and maintenance would be negligible. Similarly, exhaust from off-road equipment and on-road vehicle use during Project operation would not be expected to create objectionable odors. Photovoltaic solar projects are not typically large generators of odors.

Decommissioning

At the end of the 30-year term of the ROW grant, Project operation and maintenance would cease and associated facilities would be decommissioned and dismantled, and the site would be restored. Decommissioning activities could generate temporary air pollutant emissions similar to those that would occur during construction of the Project. It is likely that technological advances and continuing stringent regulation of air pollutants would result in lower rates of emissions than during the construction phase of the Project.

4.2.3.2 Alternative 2: Resource Avoidance Alternative

Construction

As discussed in Section 4.2.1, the annual criteria pollutant emissions that would be generated within the MDAB under Alternative 2 were estimated based on the analysis developed for the Proposed Action, but scaled, where applicable, to account for differences in Project activities between Alternative 2 and the Proposed Action. The primary difference between the alternatives is that Alternative 2 would involve ground disturbance of a smaller area than the Proposed Action, and therefore would result in a reduced amount of fugitive dust associated with ground disturbance. The fugitive dust emissions for the Proposed Action were based on an assumption that grading requirements would total 838,000 cubic yards. The Applicant estimates that the grading requirements for Alternative 2 would total 750,000 cubic yards, or approximately 89 percent of the Proposed Action. Therefore, the fugitive dust emissions for Alternative 2 were estimated by scaling down the fugitive dust emissions of the Proposed Action by 11 percent.

Table 4.2-5 provides the estimated maximum daily criteria pollutant emissions that would be generated within the MDAB during construction of Alternative 2. As shown in Table 4.2-5, the maximum daily emissions for VOC, NO_x, CO, SO_x, and $PM_{2.5}$ would be below the respective MDAQMD thresholds. Therefore, construction of Alternative 2 would not result in or contribute to an exceedance of an applicable daily or hourly AAQS. With regard to PM_{10}, the estimated maximum daily emissions would exceed the MDAQMD threshold, indicating that PM_{10} emissions could result in an exceedance of the state PM_{10} 24-hour AAQS.

The emissions estimates in Tables 4.2-5 and 4.2-6 show that the emissions associated with Alternative 2 construction activities would exceed applicable MDAQMD daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$ emissions, resulting in an adverse effect. As shown in Table 4.2-6, the annual emissions for all pollutants would be below the respective annual *de minimis* levels (below 100 tons/year), except for PM_{10}, which would exceed the *de minimis* level. The projected exceedance of the PM_{10} MDAQMD annual emissions threshold would also contribute to the non-attainment for PM_{10} in the area under CAAQS.

The vast majority of Project-related PM_{10} and $PM_{2.5}$ emissions (approximately 88 percent) are not generated onsite, but are generated by worker vehicles and delivery trucks traversing the unpaved, 5.6-mile long segment of 16th Avenue/Seeley Avenue between the site entrance and the beginning of pavement near SR-78. Mitigation Measure TRN-4 would require that the Applicant pave this segment, a length of approximately 5.6 miles, prior to beginning any other construction activities at the Project area. This measure would reduce emissions of PM_{10} and $PM_{2.5}$ during construction substantially.

Implementation of mitigation measures AQ-1 (dust control plan), AQ-2 (protect the stability of desert pavement areas), and TRN-4 (paving the access road) would minimize air quality impacts to the extent feasible, particularly related to emissions of $PM_{2.5}$ and PM_{10}. MDAQMD Rule 403.2 requires that soil stabilizers be used on exposed surfaces to reduce fugitive dust emissions. Even with these measures, the PM_{10} emissions during construction would exceed the MDAQMD regional significance threshold of 82 pounds/day. The exceedance of the MDAQMD thresholds and the annual *de minimis* level would be temporary, occurring only during the 25 month construction period. Upon completion of construction, these emissions would cease.

Table 4.2-5. Alternative 2 Construction Daily Emission Estimations (Pounds/Day)

Daily Emissions (Pounds per Day)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	249.14	14.37	263.51	29.33	13.22	42.55	271.61	0.50	158.55	24.86
Off-site emissions	2,539.00	2.90	2,541.91	261.26	2.76	264.02	151.38	0.85	342.55	19.75
Total	2,788.14	17.27	2,805.42	290.59	15.98	306.57	422.99	1.35	501.10	44.61
MDAQMD CEQA daily threshold	NA	NA	82	NA	NA	82	137	137	548	137
Exceed the threshold (Yes/No)	NA	NA	Yes	NA	NA	Yes	Yes	No	No	No

Note: NA = Not Applicable.

Table 4.2-6. Alternative 2 Construction Annual Emission Estimations (Tons/Year)

Annual Emissions (Tons per Year)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	27.63	1.62	29.25	3.28	1.49	4.77	30.19	0.06	17.96	2.80
Off-site emissions	266.97	0.29	267.26	27.47	0.27	27.75	15.00	0.09	37.13	2.05
Total	294.60	1.91	296.51	30.75	1.76	32.52	45.19	0.15	55.09	4.86
de minimis level	NA	NA	100	NA	NA	100	100	100	100	100
MDAQMD CEQA annual threshold	NA	NA	15	NA	NA	15	25	25	100	25
Exceed the threshold (Yes/No)	NA	NA	Yes	NA	NA	Yes	Yes	No	No	No

Note: NA = Not Applicable.

The distances to the closest sensitive receptors (i.e., residences) under Alternative 2 would be the same as under the Proposed Action. Therefore, emissions of DPM from construction would not be expected to cause adverse health risks at any sensitive receptor in the vicinity of Alternative 2.

The impact of odors is not expected to be substantial, because construction activities would be intermittent and spatially dispersed, and because the closest sensitive receptor is located approximately 3,700 feet from the Project area.

Operation and Maintenance

Operation of Alternative 2 would result in substantially lower emissions than Project construction, since the Project would not have any major stationary emission sources. Annual emissions for operations of Alternative 2 would be the same as estimated for operation of the Proposed Action, as shown in Table 4.2-4. The emission estimates in Table 4.2-4 show that emissions from operation of Alternative 2 would all be below MDAQMD thresholds and *de minimis* levels. Impacts associated with operation and maintenance of Alternative 2 would not be expected to result in or contribute to an exceedance of a NAAQS or CAAQS.

Sources of DPM emissions during operation include trucks and maintenance equipment, such as diesel fueled vehicles. DPM emissions during operation would be very limited. Due to the negligible amount of emissions that would be generated during operation and maintenance of the Project, and because the closest sensitive receptor is located approximately 3,700 feet from the Project area, the risk from exposure to DPM during Project operation and maintenance would be negligible. Similarly, exhaust from off-road equipment and on-road vehicle use during Project operation would not be expected to create objectionable odors. Photovoltaic solar projects are not typically large generators of odors.

Decommissioning

At the end of the 30-year term of the ROW grant, operation and maintenance of Alternative 2 may cease in the absence of ROW renewal. In that case, associated facilities would be decommissioned and dismantled, and the site would be restored. It is likely that technological advances and continuing stringent regulation of air pollutants would result in lower rates of emissions than during the construction phase of Alternative 2.

4.2.3.3 Alternative 3: Reduced Project Alternative

Construction

As discussed in Section 4.2.1, the annual criteria pollutant emissions that would be generated within the MDAB under Alternative 3 were estimated based on the analysis developed for the Proposed Action, but scaled, where applicable, to account for differences in Project activities between Alternative 3 and the Proposed Action. The differences between the alternatives are that Alternative 3 would involve ground disturbance of a smaller area than the Proposed Action, resulting in a reduced amount of fugitive dust associated with ground disturbance, and that Alternative 3 would require fewer deliveries of Project components, resulting in a reduced amount of onsite and offsite vehicle emissions.

The fugitive dust emissions for the Proposed Action were based on an assumption that grading requirements would total 838,000 cubic yards. The Applicant estimates that the grading requirements for Alternative 3 would total 670,000 cubic yards, or approximately 80 percent of the Proposed Action. Therefore, the fugitive dust emissions for Alternative 3 were estimated by scaling down the fugitive dust emissions of the Proposed Action by 20 percent.

Alternative 3 would involve a reduced number of truck deliveries of Project components and equipment from that of the Proposed Action. The Applicant estimates that the Proposed Action and Alternative 2 would require up to 14,400 truck deliveries, while Alternative 3 would require 10,800 deliveries, a reduction of 25 percent. Therefore, the onsite and offsite emissions associated with truck deliveries for Alternative 3 were estimated by scaling down the vehicle dust and fugitive dust emissions of the Proposed Action by 25 percent.

Table 4.2-7 provides the estimated maximum daily criteria pollutant emissions that would be generated within the MDAB during construction of Alternative 3. As shown in Table 4.2-7, the maximum daily emissions for VOC, NO_x, CO, SO_x, and $PM_{2.5}$ would be below the respective MDAQMD thresholds. Therefore, construction of Alternative 3 would not result in or contribute to an exceedance of an applicable daily or hourly AAQS. With regard to PM_{10}, the estimated maximum daily emissions would exceed the MDAQMD threshold, indicating that PM_{10} emissions could result in an exceedance of the PM_{10} 24-hour CAAQS.

The emissions estimates in Tables 4.2-7 and 4.2-8 show that the emissions associated with Alternative 3 construction activities would exceed applicable MDAQMD daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$ emissions, resulting in an adverse effect. As shown in Table 4.2-8, the annual emissions for all pollutants would be below the respective annual *de minimis* levels (below 100 tons/year), except for PM_{10}, which would exceed the *de minimis* level. The projected exceedance of the PM_{10} MDAQMD annual emissions threshold would also contribute to the non-attainment for PM_{10} in the area under CAAQS.

Implementation of mitigation measures AQ-1 (dust control plan) and AQ-2 (protect the stability of desert pavement areas) would minimize air quality impacts to the extent feasible, particularly related to emissions of $PM_{2.5}$ and PM_{10}. MDAQMD Rule 403.2 requires that soil stabilizers be used on exposed surfaces to reduce fugitive dust emissions. Even with this mitigation measure (AQ-1), the PM_{10} emissions during construction would exceed the MDAQMD regional significance threshold of 82 pounds/day. The exceedance of the MDAQMD thresholds and the annual *de minimis* level would be temporary, occurring only during the 25 month construction period. Upon completion of construction, these emissions would cease.

Table 4.2-7. Alternative 3 Construction Daily Emission Estimations (Pounds/Day)

Daily Emissions (Pounds per Day)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	222.89	14.37	237.26	26.26	13.22	39.47	271.55	0.50	158.54	24.86
Off-site emissions	2477.56	2.59	2480.16	254.79	2.47	257.25	134.41	0.82	339.42	18.56
Total	2700.45	16.96	2717.42	281.04	15.69	296.72	405.96	1.32	497.96	43.42
MDAQMD CEQA daily threshold	NA	NA	82	NA	NA	82	137	137	548	137
Exceed the threshold (Yes/No)	NA	NA	Yes	NA	NA	Yes	Yes	No	No	No

Note: NA = Not Applicable.

Table 4.2-8. Alternative 3 Construction Annual Emission Estimations (Tons/Year)

Annual Emissions (Tons per Year)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	24.74	1.62	26.36	2.93	1.49	4.42	30.19	0.06	17.96	2.80
Off-site emissions	261.43	0.26	261.69	26.89	0.24	27.14	13.42	0.09	36.84	1.94
Total	286.17	1.88	288.05	29.82	1.73	31.56	43.60	0.15	54.80	4.74
de minimis level	NA	NA	100	NA	NA	100	100	100	100	100
MDAQMD CEQA annual threshold	NA	NA	15	NA	NA	15	25	25	100	25
Exceed the threshold (Yes/No)	NA	NA	Yes	NA	NA	Yes	Yes	No	No	No

Note: NA = Not Applicable.

A comparison of the emissions associated with each action alternative is shown in Tables 4.2-9 and 4.2-10. The comparison shows that the overall emissions associated with the alternatives are approximately the same. Alternative 2 PM_{10} and $PM_{2.5}$ emissions are approximately 98.8 percent of those of the Proposed Action, and Alternative 3 emissions are approximately 96 percent of those of the Proposed Action. This result is because the vast majority of PM_{10} and $PM_{2.5}$ emissions (approximately 88 percent) are not generated onsite, but are generated by worker vehicles and delivery trucks traversing the unpaved, 5.6-mile long segment of 16th Avenue/Seeley Avenue between the site entrance and the beginning of pavement near SR-78. Because Alternatives 2 and 3 would have the same number of workers and water trucks as the Proposed Action, and would use the same access road, these emissions would be largely unaffected. There would be reductions in emissions associated with the reduced amount of grading under Alternatives 2 and 3, and with the reduction in the number of delivery trucks under Alternative 3. But these reductions would be minor compared to the emissions associated with the use of 16th Avenue/Seeley Avenue under all three action alternatives. Mitigation Measure TRN-4 would require that the Applicant pave this segment, a length of approximately 5.6 miles, prior to beginning any other construction activities at the Project area. This measure would reduce emissions of PM_{10} and $PM_{2.5}$ during construction substantially.

Table 4.2-9. Comparison of Daily Construction Emissions Among Action Alternatives (Pounds/Day)

Daily Emissions (Pounds per Day)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
Alternative 1 Total	2,818.94	17.27	2,836.21	294.21	15.98	310.19	422.99	1.35	501.10	44.61
Alternative 2 Total	2,788.14	17.27	2,805.42	290.59	15.98	306.57	422.99	1.35	501.10	44.61
Alternative 3 Total	2700.45	16.96	2717.42	281.04	15.69	296.72	405.96	1.32	497.96	43.42

Table 4.2-9. Comparison of Daily Construction Emissions Among Action Alternatives (Pounds/Day)

Daily Emissions (Pounds per Day)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
MDAQMD CEQA daily threshold	NA	NA	82	NA	NA	82	137	137	548	137

Note: NA = Not Applicable.

Table 4.2-10. Comparison of Annual Construction Emissions Among Action Alternatives (Tons/Year)

Annual Emissions (Tons per Year)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
Alternative 1 Total	298.02	1.91	299.92	31.15	1.76	32.91	45.19	0.15	55.09	4.86
Alternative 2 Total	294.60	1.91	296.51	30.75	1.76	32.52	45.19	0.15	55.09	4.86
Alternative 3 Total	286.17	1.88	288.05	29.82	1.73	31.56	43.60	0.15	54.80	4.74
de minimis level	NA	NA	100	NA	NA	100	100	100	100	100
MDAQMD CEQA annual threshold	NA	NA	15	NA	NA	15	25	25	100	25

Note: NA = Not Applicable.

The distances to the closest sensitive receptors (i.e., residences) under Alternative 3 would be the same as under the Proposed Action. Therefore, emissions of DPM from construction would not be expected to cause adverse health risks at any sensitive receptor in the vicinity of Alternative 3. The impact of odors is not expected to be substantial, because construction activities would be intermittent and spatially dispersed, and because the closest sensitive receptor is located approximately 3,700 feet from the Project area.

Operation and Maintenance

Operation of Alternative 3 would result in substantially lower emissions than Project construction, since the Project would not have any major stationary emission sources. Annual emissions for operations of Alternative 3 would be the same as estimated for operation of the Proposed Action, as shown in Table 4.2-4. The emission estimates in Table 4.2-4 show that emissions from operation of Alternative 3 would all be below MDAQMD thresholds and *de minimis* levels. Impacts associated with operation and maintenance of Alternative 3 would not be expected to result in or contribute to an exceedance of a NAAQS or CAAQS.

Sources of DPM emissions during operation include trucks and maintenance equipment, such as diesel fueled vehicles. DPM emissions during operation would be very limited. Due to the negligible amount of emissions that would be generated during operation and maintenance of the

Project, and because the closest sensitive receptor is located approximately 3,700 feet from the Project area, the risk from exposure to DPM during Project operation and maintenance would be negligible. Similarly, exhaust from off-road equipment and on-road vehicle use during Project operation would not be expected to create objectionable odors. Photovoltaic solar projects are not typically large generators of odors.

Decommissioning

At the end of the 30-year term of the ROW grant, operation and maintenance of Alternative 3 would cease and associated facilities would be decommissioned and dismantled, and the site would be restored. It is likely that technological advances and continuing stringent regulation of air pollutants would result in lower rates of emissions than during the construction phase of Alternative 3.

4.2.4 Application of CEQA Significance Thresholds

Emissions estimates for construction and decommissioning of Alternatives 1, 2, or 3 would exceed applicable MDAQMD daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$. The emissions estimates assume that the APMs and Mitigation Measures AQ-1 and AQ-2 would be applied to each alternative, so these measures would not reduce these emissions to be below MDAQMD thresholds, resulting in a significant and unavoidable impact for construction and decommissioning. Emissions associated with operation of Alternatives 1, 2, or 3 would not exceed applicable MDAQMD thresholds. Therefore, Alternatives 1, 2, and 3 would each have less than significant impacts to air resources during operations and maintenance.

AIR-1) Would the Project conflict with or obstruct implementation of the applicable air quality attainment or maintenance plan?

Because the Project is located in the Federal attainment/unclassified area, there is no applicable air quality plan and SIP from MDAQMD and ARB. Therefore, Alternatives 1, 2, or 3 would not conflict or obstruct implementation of the applicable air quality plan. There would be no impact from Alternatives 1, 2, or 3.

AIR-2) Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation when added to the local background?

As shown in Tables 4.2-2 and 4.2-3 for Alternative 1, Tables 4.2-5 and 4.2-6 for Alternative 2, and Tables 4.2-7 and 4.2-8 for Alternative 3, emissions associated with Project construction activities are expected to exceed applicable MDAQMD daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$ emissions. These emissions estimates already account for the APMs related to watering and speed limits to reduce dust. Even with mitigation measures AQ-1, AQ-2, and TRN-4, emissions for NO_x, PM_{10}, and $PM_{2.5}$ during construction would exceed the MDAQMD daily and annual thresholds, and these emission levels could cause localized exceedances, or contribute significantly to existing exceedances, of the state or Federal air quality standards, including PM_{10} for which the Project area is already within the non-attainment area for CAAQS for PM_{10}. Therefore, Alternatives 1, 2, and 3 would each have temporary significant and unavoidable NO_x, PM_{10}, and $PM_{2.5}$ impacts during construction. Due to technological advances

and continuing stringent regulation of air pollutants, it is expected that decommissioning emissions would be lower than construction emissions for each of the alternatives.

As shown in Table 4.2-4, emissions associated with Alternatives 1, 2, or 3 operations would not exceed applicable MDAQMD thresholds. Therefore, Alternatives 1, 2, and 3 would each have less than significant impacts during operations and maintenance to air resources.

AIR-3) Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for ozone precursors)?

Construction and decommissioning of Alternatives 1, 2, or 3 would exceed the MDAQMD CEQA significance thresholds for NO_x, PM_{10}, and $PM_{2.5}$, and the addition of emissions from cumulative projects would only increase those exceedances. The Project area is within the non-attainment area for CAAQS for PM_{10}. Even with mitigation measures AQ-1, AQ-2, and TRN-4, Alternatives 1, 2, and 3 would result in a cumulatively considerable net increase of nonattainment pollutants (PM_{10}) and would have a significant and unavoidable impact to regional air quality during construction and decommissioning activities; however, the significant impact would be temporary, and would cease upon completion of construction and decommissioning activities.

Emissions associated with Alternatives 1, 2, or 3 operations would not exceed applicable MDAQMD thresholds and therefore the contribution of Alternatives 1, 2, or 3 would not be cumulatively considerable resulting in a less than significant impact. In addition, Alternatives 1, 2, or 3 would provide renewable energy, which would reduce statewide emissions associated with power generation compared to fossil fuel power generation.

AIR-4) Would the Project expose sensitive receptors to substantial pollutant concentrations including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (H1) (non-cancerous) greater than or equal to 1? As defined in the MDAQMD's CEQA Guidelines, sensitive receptors include land uses associated with residences, schools, daycare centers, playgrounds, and medical facilities. The following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated using CEQA Significance Criterion AIR-4:

- **Any industrial project within 1,000 feet;**
- **A distribution center (40 or more trucks per day) within 1,000 feet;**
- **A major transportation project (50,000 or more vehicles per day) within 1,000 feet;**
- **A dry cleaner using perchloroethylene within 500 feet; or**
- **A gasoline dispensing facility within 300 feet?**

Alternatives 1, 2, or 3 would not expose sensitive receptors within 1,000 feet of the Project to substantial pollutant concentrations, including TACs. Though construction-related emissions from Alternatives 1, 2, or 3 would result in emissions in excess of MDAQMD thresholds for NO_x, PM_{10}, and $PM_{2.5}$, there are no sensitive receptors within 1,000 feet of the Project area. The

closest residence (apparent occupied mobile home trailer) is located approximately 3,700 feet north of the northeast corner of the Alternative 1, 2, or 3 boundary. The next two closest sensitive air quality receptors are located in the residential community of Nicholls Warm Springs/Mesa Verde approximately 4,800 north of the northeast corner of the Alternative 1, 2, or 3 boundary. Impacts associated with construction would be less than significant.

During operations of Alternatives 1, 2, or 3, the emissions of both criteria and toxic pollutants would be relatively small. The decommissioning of Alternatives 1, 2, or 3 would not expose sensitive receptors to substantial pollutant concentrations given the distance of sensitive receptors from the site and the intermittent nature of construction activities. Thus, impacts during construction, operation, maintenance, and decommissioning of Alternatives 1, 2, or 3 would not expose sensitive receptors to substantial pollutant concentrations and therefore would be less than significant.

AIR-5) Would the Project create objectionable odors affecting a substantial number of people?

Alternatives 1, 2, or 3 would not create objectionable odors affecting a substantial number of people. The specific potential minor odor sources during construction of Alternatives 1, 2, or 3 would include equipment and construction vehicle exhausts. Due to the sparse population adjacent to the site, these mild odors would not affect a substantial number of people. During operation of Alternatives 1, 2, or 3, equipment and other activities would not include significant odor-producing sources. Few odor sources would be activated during decommissioning. Thus, impacts would not create objectionable odors affecting a substantial number of people during construction, operation, maintenance, and decommissioning of Alternatives 1, 2, or 3, and therefore would be less than significant.

AIR-6) Would the Project expose sensitive receptors that are located within one mile of the Project site to substantial point source emissions?

There are two sensitive receptors within one mile of Alternatives 1, 2, or 3. One is an apparent occupied mobile home trailer located approximately 3,700 feet north of the northeast corner of the Alternative 1 boundary, approximately 3,200 feet north of the northeast corner of the Alternative 2 boundary, and approximately 6,250 feet north of the northeast corner of the Alternative 3 boundary. The other is a residence located approximately 4,800 feet north of the northeast corner of the Alternative 1 boundary, approximately 4,300 feet north of the northeast corner of the Alternative 2 boundary, and approximately 6,250 feet north of the northeast corner of the Alternative 3 boundary. Although these receptors are located within one mile of the Project boundary, emissions sources would be dispersed throughout the Project area and the access road, and there would be no substantial point source emissions. Therefore, Alternatives 1, 2, or 3 would not expose sensitive receptors that are within one mile of the Project area to substantial point source emissions, and the impact would be less than significant.

AIR-7) Would the Project involve the construction of a sensitive receptor located within one mile of an existing substantial point source emitter?

Alternatives 1, 2, and 3 do not involve the establishment of a use that would be classified as a sensitive receptor. There would be no impact.

4.2.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Chapter 3.2 would be maintained. There would be no air emissions associated with vehicles or equipment, and no fugitive dust emissions from ground disturbance. Therefore Alternative 4 would not result in any air quality impacts.

4.2.6 Cumulative Impacts

The geographic scope considered for potential cumulative impacts to regional air quality is the MDAB. With respect to existing projects, the summary of available air quality data presented in Table 3.2-3 reflects the cumulative contributions of all emissions from those projects, and Table 3.2-4 reflects the attainment status resulting from those emissions. Reasonably foreseeable future projects within the MDAB, both those that release emissions and those that reduce emissions, would be expected to affect the air quality, and potentially the attainment status, in the future.

Because there are no sensitive receptors within 1,000 feet of the Project site, there is no potential for the Project to contribute to cumulative air quality impacts that could exceed the MDAQMD CEQA Guidelines. There are two sensitive receptors within one mile of the Project; one is an apparent occupied mobile home trailer located approximately 3,700 feet north of the northeast corner of the Project boundary, and the other is a residence located approximately 4,800 feet north of the northeast corner of the Project site boundary. The Project could potentially contribute to cumulative impacts to these two receptors, should another project also be located within one mile of these receptors. The only other projects within one mile of those receptors are the NRG Blythe PV Project, and the BMSP.

The temporal scope for the potential for the Project to contribute to cumulative regional air quality impacts is from construction through decommissioning of the Project. However, the time period in which Project emissions would exceed MDAQMD thresholds is within months 6 to 22 of the 25 month construction period. Outside of this time period, Project emissions would be minimal, and would not be a significant contributor to cumulative air quality impacts. Once Project construction ceases, the contribution of the Project to cumulative fugitive dust emissions during operations would be greatly reduced. In addition, once the Project is decommissioned, Project-related air emissions would cease, and the Project would no longer contribute to cumulative air quality impacts.

The ambient air quality and attainment status of the area, discussed in Section 3.2, incorporate emissions from all current sources in the region. Tables 4.2-11 and 4.2-12 present the emissions from other current and potential future sources in the Project area. In 2015, the Blythe Energy Center and SoCal Gas, both in Blythe, were the largest stationary emitting sources of CO in Riverside County. For NOx in 2015, SoCal Gas was the largest source and the Blythe Energy Center was the fourth-largest source in Riverside County. These non-renewable energy facilities are point sources to which the present Project will add emissions. In addition to these sources,

the construction of the Palen and Modified Blythe solar projects may be contemporaneous with that of the Project.

Table 4.2-11. Daily Construction Emission Estimations for Project and Nearby Projects (Pounds/Day)

Daily Emissions (Pounds Per Day)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG/VOC
Project On-site emissions	279.93	14.37	294.30	32.95	13.22	46.17	271.61	0.50	158.55	24.86
Project Off-site emissions	2,539.00	2.90	2,541.91	261.26	2.76	264.02	151.38	0.85	342.55	19.75
Project Total	**2,818.94**	**17.27**	**2,836.21**	**294.21**	**15.98**	**310.19**	**422.99**	**1.35**	**501.10**	**44.61**
Palen Total[1]	NR	NR	277.7	NR	NR	73.2	660.9	2.3	1,102.9	43.4
Modified Blythe On-Site Emissions[2]	674.4	4.7	679.1	83.0	4.3	87.3	122.5	0.2	54.9	18.4
Modified Blythe Off-Site Emissions[2]	17.3	7.9	25.2	5.3	7.3	12.6	333.3	0.7	304.2	40.4
Modified Blythe Total[2]	691.7	12.6	704.3	88.3	11.6	99.9	455.8	0.9	359.1	58.8
MDAQMD CEQA daily threshold	NA	NA	82	NA	NA	82	137	137	548	137

Note: NA = Not Applicable.
NR = Not Reported
1 – Source is BLM 2017, Palen Draft EIS/EIR. Values were not reported per offsite and onsite, or fugitive versus exhaust. Values provided here are the highest of the 4 years reported. ROG was not reported, but VOCs were reported.
2 – Source is BLM 2015, Modified Blythe Final EIS.

Table 4.2-12. Construction Annual Emission Estimations for Project and Nearby Projects (Tons/Year)

Annual Emissions (Tons per Year)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG/VOC
Project On-site emissions	31.05	1.62	32.67	3.68	1.49	5.17	30.19	0.06	17.96	2.80
Project Off-site emissions	266.97	0.29	267.26	27.47	0.27	27.75	15.00	0.09	37.13	2.05
Project Total	**298.02**	**1.91**	**299.92**	**31.15**	**1.76**	**32.91**	**45.19**	**0.15**	**55.09**	**4.86**
Palen[1]	NR	NR	36.65	NR	NR	9.66	87.24	0.30	145.58	5.73

Table 4.2-12. Construction Annual Emission Estimations for Project and Nearby Projects (Tons/Year)

Annual Emissions (Tons per Year)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG/VOC
Modified Blythe On-Site Emissions[2]	69.1	0.4	69.5	8.7	0.5	9.2	13.4	0	5.7	2.1
Modified Blythe Off-Site Emissions[2]	1.9	0.9	2.8	0.6	0.9	1.5	39.7	0.1	31.7	4.3
Modified Blythe Total[2]	71.0	1.5	72.3	9.3	1.4	10.7	53.1	0.1	37.4	6.4
Blythe Energy[3]	NR	NR	4.8	NR	NR	NR	35.6	1.9	69.4	4.4
SCG Blythe[3]	NR	NR	8.2	NR	NR	NR	330.6	0.2	60.5	32.4
de minimis level	NA	NA	100	NA	NA	100	100	100	100	100
MDAQMD CEQA annual threshold	NA	NA	15	NA	NA	15	25	25	100	25

Note: NA = Not Applicable.
NR = Not Reported
1 – Source is BLM 2017, Palen Draft EIS/EIR. Values were not reported per offsite and onsite, or fugitive versus exhaust. Values provided here are the highest of the 4 years reported. ROG was not reported, but VOCs were reported.
2 – Source is BLM 2015, Modified Blythe Final EIS.
3 -- Source is CARB 2018. Emissions are those reported for 2016.

Alternative 1 – Proposed Action

Construction

As discussed in Section 4.2.3, Project construction activities would exceed applicable MDAQMD daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$ emissions, resulting in an adverse effect. In addition, emissions of PM_{10} would exceed the *de minimis* level, and would also contribute to the non-attainment for PM_{10} in the area under CAAQS. Even with implementation of APM and mitigation measures (AQ-1), the PM_{10} emissions during construction would exceed the MDAQMD regional significance threshold of 82 pounds/day. The exceedance of the MDAQMD thresholds and the annual *de minimis* level would be temporary, occurring only during the 25 month construction period. Upon completion of construction, these emissions would cease.

The cumulative analysis focuses on whether a specific project would result in a cumulatively considerable increase in emissions. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the air basin, and this regional impact is cumulative rather than attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects.

The MDAQMD thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the existing cumulative air quality conditions. These thresholds are designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and Federal ambient air quality standards. Projects that would not exceed the thresholds of significance would not contribute a considerable amount of criteria air pollutant emissions to the region's emissions profile, and would not impede attainment and maintenance of ambient air quality standards.

Because the Project would exceed the air quality significance thresholds for NO_x, PM_{10}, and $PM_{2.5}$ emissions, the Project's construction emissions would have a cumulatively considerable contribution to the region's air quality. The Project area is already within the non-attainment area for CAAQS for PM_{10}. Therefore, the Project would contribute substantially to an existing or projected air quality violation when added to the local background (AIR-2), and would result in a cumulatively considerable net increase of a criteria pollutant for which the Project region is non-attainment under an applicable Federal or state ambient air quality standard (AIR-3).

BLM's Western Solar Plan identifies the energy development projects occurring largely on Federal lands in the East Riverside SEZ. The air quality impact of a solar energy development scenario for the Riverside East SEZ identified theoretical continuous development of 9,000 acres of renewable energy development in the central portion of the SEZ. Based on modeling in the BLM Solar DEIS, 24-hr PM_{10} concentrations of about 10 micrograms per cubic meter would occur at residences around the eastern portion of the SEZ near Blythe. This concentration added to current ambient concentrations would not be enough to exceed the Federal PM_{10} standard, but would exceed the state 24-hour standard. While the analysis is very conservative and may overestimate the concentrations, the Western Solar Plan acknowledges that the emissions from cumulative projects (solar and others), combined with natural sources such as dust storms, would temporarily degrade particulate air quality in the SEZ. Aggressive dust control is recommended with implementation of solar projects.

Construction of the Project would not cause a substantial impact due to the generation of odors from diesel equipment emissions because construction activities would be intermittent and spatially dispersed, equipment would conform to California Clean Air Act Section 2449 standards for off-road vehicles, and associated odors would dissipate quickly from the source (impact AIR-5). Additional cumulative projects are not expected to cause diesel-related odors that would intermingle with those of the Project.

With respect to impacts on sensitive receptors, only two sensitive receptors are located within one mile of the Project; one is an apparent occupied mobile home trailer located approximately 3,700 feet north of the northeast corner of the Project boundary, and the other is a residence located approximately 4,800 feet north of the northeast corner of the Project site boundary. The only other projects within one mile of those receptors are the NRG Blythe PV Project, and the BMSP. Of these, the NRG Blythe PV Project has already been constructed, and its operations-related emissions are expected to be minimal. The analysis of the BMSP concluded that construction would not result in a significant impact to sensitive receptors. Although these two receptors are located within one mile of the DQSP boundary, emissions sources would be dispersed throughout the Project area and along the Project the access road, and there would be no substantial point source emissions. Therefore, cumulative impacts to those receptors would

be less than significant, and the Project would not contribute to exposure of sensitive receptors to substantial pollutant concentrations (impact AIR-4).

The Project would not contribute to a conflict with or obstruction of implementation of an applicable air quality attainment or maintenance plan (AIR-1), would not be a source of substantial point source emissions (impact AIR-6), and would not result in placing sensitive receptors within one mile of an existing substantial point source emitter (impact AIR-7). Therefore, the impact of the Project with respect to these criteria would not be cumulatively considerable.

Operations

As discussed in Section 4.2.3, operation of the Project would result in substantially lower emissions than Project construction, since the Project would not have any major stationary emission sources during operations. Annual emissions for Project operation would all be below MDAQMD CEQA annual thresholds and *de minimis* levels, and the contribution of the Project to air quality impacts would not be cumulatively significant.

Decommissioning

It is likely that technological advances and continuing stringent regulation of air pollutants would result in lower rates of emissions during decommissioning than during the construction phase of the Project. In addition, the duration of decommissioning would be approximately one year, and therefore the duration of emissions that exceed MDAQMD thresholds would be shorter than that of construction.

Alternative 2 – Resource Avoidance Alternative

As shown in Tables 4.2-9 and 4.2-10, the emissions associated with Alternative 2 construction and decommissioning activities would be almost the same, although slightly (approximately one percent) lower than those of the Proposed Action. Therefore, the contribution of Alternative 2 to cumulative air quality impacts would be effectively the same as those described for the Proposed Action. The selection of the Resource Avoidance Alternative over the proposed Project would not result in air emissions being reduced to a level that is not cumulatively significant.

Alternative 3 – Reduced Project Alternative

As shown in Tables 4.2-9 and 4.2-10, the emissions associated with Alternative 3 construction and decommissioning activities would be almost the same, although slightly (approximately four percent) lower than those of the Proposed Action. Therefore, the contribution of Alternative 3 to cumulative air quality impacts would be effectively the same as those described for the Proposed Action. The selection of the Reduced Project Alternative over the proposed Project would not result in air emissions being reduced to a level that is not cumulatively significant.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which

could include a different solar project, or other development. Alternative 4 would not contribute to cumulative air quality impacts.

4.2.7 Residual Impacts

A substantial residual Project-specific and cumulative impact would result from short-term construction emissions of NO_x, $PM_{2.5}$, and PM_{10} after APMs and mitigation measures have been incorporated, because these emissions would not be reduced to below MDAQMD thresholds. The emissions would be temporary, and would cease once construction is completed. However, any impacts that occurred to human receptors and vegetation due to deposition of nitrogen on soils would continue following the completion of construction.

4.3 Biological Resources – Vegetation

4.3.1 Methodology for Analysis

This section analyzes potential impacts to vegetation resources from construction, operation and maintenance, and decommissioning of the Proposed Action and Alternatives. This analysis of potential impacts relies on results of literature reviews and biological surveys (as summarized in Section 3.3, *Biological Resources – Vegetation*) and coordination with appropriate permitting agencies including the USFWS and CDFW. Acreages calculated for impacts were based on the best information available at the time of publication of the Draft PA/EIS/EIR.

Impact analyses typically characterize effects to native vegetation as temporary or permanent, with a permanent impact referring to areas that are paved or otherwise precluded from restoration to a pre-Project state. In desert ecosystems, the definition of permanent impacts must reflect the slow recovery rates of its plant communities on bajadas (alluvial fans with established vegetation communities and cryptogrammic crusts on the surface soils (Lovich and Bainbridge 1999). Abella (2010) reviewed additional studies on desert habitat recovery following disturbance, and determined that disturbance of relatively recent geomorphic desert surfaces not containing vegetation (e.g., new deposition of alluvial flows, eolian sand deposits, etc.), primary succession occurs whereby biological communities are initially established. In reviewing studies focused on primary succession, Abella noted that establishment of desert vegetation occurred between 9 to 33 years following disturbance (defined as deposition of alluvium as a result of debris flows), as compared to several studies addressing secondary succession (i.e., recovery from disturbance to established vegetation communities), documenting various rates of recovery after several hundreds of years (Abella 2010). For the purposes of this analysis, all ground disturbance activity is considered a permanent impact due to the long time period for natural revegetation to occur in the desert. Natural recovery rates from disturbance in desert ecosystems depend on the nature and severity of the impact and the autecology of the plant species under consideration for revegetation. For example, creosote bushes can resprout a full canopy within 5 years after damage from heavy vehicle traffic (Gibson et al. 2004 as cited in CEC 2010). Most other species are less robust. For larger-scale projects, severe damage involving vegetation removal and soil disturbance may take from 50 to 300 years for partial recovery with complete ecosystem recovery requiring over 3,000 years (Lovich and Bainbridge 1999).

4.3.1.1 CEQA Significance Criteria

The following thresholds of significance are used to determine whether implementing the Project would result in a significant impact to biological resources pursuant to CEQA. These thresholds of significance are based on Appendix G of the state CEQA Guidelines and the County of Riverside CEQA Environmental Assessment Form. A vegetation resources impact is considered significant if implementation of the proposed Project would do any of the following:

> BIO-1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species including species identified in the California Desert Native Plants Act, in local or regional plans, policies, or regulations, or by CDFW or USFWS.

BIO-2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.

BIO-3) Have a substantial adverse effect on Federal protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marshes, vernal pools, and coastal areas) or any state-protected jurisdictional areas not subject to regulation under Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.

BIO-5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

BIO-6) Conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan.

BIO-7) Substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

4.3.2 Applicant-Proposed Measures

The Applicant proposed the following APMs to address potential effects to vegetation, wetland, and riparian resources. These measures primarily were intended to avoid or reduce potential direct and indirect Project impacts to wildlife resources, specifically to Mojave desert tortoise and its habitat; however, they also would reduce Project impacts to vegetation resources identified in this chapter. APMs for Project impacts to vegetation, wetland, and riparian resources are listed below. The impact analysis assumes that the applicable APMs would be implemented as part of the Project. Therefore, these APMs are to be incorporated into the EICMPP/MMRCP, along with the agency-required mitigation measures.

APM BIO-1. Environmental Inspection and Compliance Monitoring Program and Plan. Prior to the Notice to Proceed, a comprehensive Environmental Inspection and Compliance Monitoring Program and Plan (EICMPP)/Mitigation Monitoring, Reporting, and Compliance Program (MMRCP), covering both construction and operation and maintenance (O&M), will be developed. The EICMPP/MMRCP will incorporate all APMs, agency-required mitigation measures, and agency regulatory requirements for all resources, including biological resources. The EICMPP/MMRCP will ensure that all measures intended to avoid or reduce impacts are appropriately implemented, documented, and reported to the applicable agencies.

A qualified individual will be designated to serve as the Project Environmental Manager. The Environmental Manager will be responsible for the following tasks.

- Development and implementation of the overall Project compliance program;
- Communication and coordination with the applicable regulatory agencies;
- Ensuring compliance with the APMs, agency-required mitigation measures, and various conditions and requirements of permits and approvals;

- Record keeping and reporting required by permits and approvals;
- Ensuring that all applicable environmental plans are up to date;
- Advising management of actual and potential compliance issues; and
- Ensuring that Project planning takes appropriate account of compliance issues in advance.

The EICMPP/MMRCP shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

APM BIO-2. Construction-Related Plans. Prior to the Notice to Proceed, the following construction-related plans will be developed, as necessary. These plans have specific objectives that would indirectly help reduce potential adverse effects to biological resources.

- Storm Water Pollution Prevention Plan (discussed in more detail in Sections 2.3.7.1, 2.3.7.9, and Mitigation Measure WATER-1);
- Dust Control Plan (discussed in more detail in Sections 2.3.7.6, 4.2.2, and Mitigation Measure AQ-1);
- Hazardous Materials Management and Emergency Response Plan, including components of a Waste Management Plan (discussed in more detail in Sections 2.3.7.1 and 4.9.3);
- Spill Prevention Control and Countermeasure Plan (discussed in more detail in Sections 2.3.7.1 and 4.9.3);
- Vegetation Resources Management Plan, which would include components for habitat restoration and site revegetation (discussed in more detail in Section 2.3.7.2, and APM BIO-4);
- Worker Environmental Awareness Program (discussed in more detail in Section 2.3.7.5 and Mitigation Measure VEG-6); and
- Fire Prevention Plan (included within the Hazardous Materials Management and Emergency Response, and discussed in more detail in Section 2.3.7.3).

The referenced plans shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

APM BIO-3. Construction-Related BMPs. The following general measures shall be implemented during construction, which would assist with reducing potential adverse effects to biological resources,

- Construction activities shall be limited to daylight hours to the extent possible;
- Water required for construction purposes shall only be stored in retention ponds (equipped with wildlife exclusion fencing), or closed containers/structures and shall be transported throughout the site in enclosed water trucks;
- Water sources (such as wells) shall be checked periodically by monitors to ensure they are not creating open water sources through leaking or consistently overfilling trucks;
- All vehicles leaking fuel or other liquids shall be immediately removed to the staging area and repaired – all spills shall be cleaned up promptly and disposed of correctly;

- All construction activities conducted outside the fenced areas shall be monitored by a qualified biological monitor;
- Vegetation removal shall be limited to the smallest area necessary and avoid entirely the desert wash woodland (microphyll woodlands);
- Construction traffic shall remain on existing roads when possible – new roads, passing areas, and turning areas shall be limited to permitted area of direct effect;
- Speed limits on all unimproved areas of the Project site shall be a maximum of 15 miles per hour;
- Trash shall always be contained within raven-proof receptacles and removed from the site frequently, including trash collected in vehicles in the field;
- No dogs or firearms shall be allowed on the Project site during construction; and
- Plant and wildlife collection by Project staff during construction or operation shall be prohibited except as allowed by the Project's permits, including permits obtained from Riverside County as per the California Desert Native Plants Act.

APM BIO-4: Prior to the Notice to Proceed, a Vegetation Resources Management Plan (VRMP) will be prepared to address impacts to and mitigation measures for special status plants and succulents. The VRMP will be submitted to BLM and the County for review and approval prior to beginning construction. The VRMP will include the following:

- Distribution of target plants within the Project site;
- Criteria for determining whether an individual plant is appropriate for salvage, including, but not limited to, special-status plants and cacti
- Equipment and methods for salvage, propagation, transport, and planting;
- Procedures for marking and flagging target plants during preconstruction clearances surveys;
- Storage and/or pre-planting requirements;
- Proposed transplantation sites;
- A requirement for maintenance of the transplanted individuals, including removal of invasive species and irrigation (if necessary); and
- A requirement for monitoring, including specification of monitoring periods, to determine the percentage of surviving plants each year and to adjust maintenance activities using an adaptive management approach.

APM BIO-5: Prior to the Notice to Proceed, the Applicant will finalize and implement their Draft Integrated Weed Management Plan (IWMP; provided in Appendix J), a component of the VRMP, to control invasive and exotic weeds. The objectives of the IWMP are:

- Identify weed species currently present within the Project components;
- Identify weeds not seen on the Project components that may have the potential to be present in the Project site and have the potential to invade the Project site due to construction activities;

- Identify construction and maintenance activities that may increase the presence of weeds or introduce new weed species on and adjacent to the Project components; and
- Identify and implement proven, new, or improved practices on an ongoing basis to ensure that the presence of weed populations on and adjacent to the Project components shall not increase because of construction and maintenance activities. These steps shall be intended to prevent weeds not currently found on the Project site from becoming established there, and prevent weeds already present on the site from spreading to other areas.
- The Draft IWMP will be modified based on BLM comments on the Draft IWMP. The particular chemicals selected will be adjusted appropriately, including timing of treatment and specific techniques employed.

4.3.3 Direct and Indirect Impacts

4.3.3.1 Alternative 1: Proposed Action

Construction

Native Vegetation Alliances

As shown in Figure 3.3-2, five native vegetation alliances and three other cover types were mapped within the Project area by BLM. *Larrea tridentata* and *Larrea tridentata – Ambrosia dumosa* are the dominant native vegetation alliances on the proposed solar facility, while the gen-tie ROW includes areas of the *Pleuraphis rigida* alliance. A small area of the *Parkinsonia florida – Olneya tesota* alliance is present along the northern Project boundary, adjacent to the NRG Blythe PV facility. An area of the *Chorizanthe rigida – Geraea canescens* Desert Pavement Alliance would not be impacted by any of the Project alternatives.

Construction of the Project would require vegetation removal and ground disturbance within most of the solar facility and much of the gen-tie ROW. Of the 3,770 acre Project area, approximately 3,304 acres, or 88 percent of the site, would have site preparation performed by either mowing or the disk and roll method. Grading, in the form of cut and fill, would be performed on approximately 466 acres, or 12 percent of the site. While only a portion of the vegetation within the gen-tie ROW would be disturbed by installation of towers, this analysis assumes all vegetation within the ROW would be permanently impacted. Construction would also require temporary vegetation removal for construction work areas such as staging and laydown areas. Although temporary work areas would be revegetated following construction, per Mitigation Measure VEG-8.17, impacts on construction work areas are considered permanent given the long time period for revegetation to occur in desert ecosystems.

Vegetation removal during construction would result in a reduction in the total acres of native vegetation in the Study Area. The acreage of direct impacts is shown in Table 4.3-1. The majority of the impacted vegetation would be the *Larrea tridentata* and *Larrea tridentata – Ambrosia dumosa* alliances, which are very common, and are not considered Special Vegetation Features subject to CMAs under the DRECP.

As shown in Table 4.3-1, none of the Project alternatives would directly impact the *Parkinsonia florida – Olneya tesota* alliance, present along the northern Project boundary. The direct impacts to the *Pleuraphis rigida* alliance, present within the gen-tie corridor, would vary among the

alternatives. Alternative 1 would directly impact 40.4 acres of the 171.4 acres of the alliance identified within the Project area.

Table 4.3-1. Comparison of Direct Impacts to Vegetation Alliances

Vegetation Alliance	Alternative 1	Alternative 2	Alternative 3
Chorizanthe rigida - Geraea canescens Desert Pavement Sparsely Vegetated	0 acres	0 acres	0 acres
Larrea tridentata and *Larrea tridentata – Ambrosia dumosa*	3,575 acres	2,607 acres	1,872 acres
Parkinsonia florida - Olneya tesota	0 acres	0 acres	0 acres
Pleuraphis rigida	40.4 acres	14 acres	14 acres

Implementation of APM BIO-3 (Construction-Related BMPs) would minimize the direct loss of native and sensitive vegetation by limiting impacts to only areas that need to be disturbed. Related measures include Mitigation Measures VEG-8 (Avoidance of Biological Resources During Construction), VEG-9 (Special-Status Plant measures), and VEG-10 (Measures for Riparian Habitat and State Waters), which require biological construction monitoring, and avoiding and minimizing construction-related impacts to vegetation, jurisdictional waters, and special-status species. Additionally, implementation of Mitigation Measures WIL-4, WIL-9, WIL-10, and WIL-12 would offset the habitat loss through habitat compensation associated with impacts to listed and otherwise special-status wildlife species.

Potential indirect impacts to vegetation resulting from construction activities include the introduction of invasive nonnative plant species such as Sahara mustard. Seeds of nonnative species from outside sources may be inadvertently introduced to native vegetation areas surrounding the Project via vehicles, people, and equipment. Ground disturbance associated with construction activities could promote the establishment and spread of opportunistic nonnative plants. Additionally, wildfires caused by construction in desert habitats are rare but may occur, and nonnative plant species often become established in burned areas. Once introduced, these species often out-compete native species for resources resulting in a reduction in growth, future dispersal, and recruitment of native species. The spread of invasive nonnative species reduces native plant diversity and abundance, eventually degrading the structure and function of vegetation alliances, and potentially reducing the food supply for animal species of management concern such as the Mojave desert tortoise. The potential introduction of invasive nonnative plant species is considered a permanent indirect impact as total eradication of invasive plants is rarely achieved. Implementation of APM BIO-3 (Construction-Related BMPs) would minimize the indirect loss of native and sensitive vegetation by limiting impacts to only areas that must be disturbed to complete construction. Related measures include Mitigation Measures VEG-8 (Avoidance of Biological Resources During Construction), VEG-9 (Special-Status Plant measures), and VEG-10 (Measures for Riparian Habitat and State Waters), which require biological construction monitoring, and avoiding and minimizing construction-related impacts to vegetation, jurisdictional waters, and special-status species.

Dust generated from vehicle travel on dirt access roads and other ground-disturbing activities could also indirectly impact native vegetation. Accumulation of dust on plants can reduce the rates of metabolic processes such as photosynthesis and respiration. Dust deposition during the 25- to 48-month construction period could degrade native vegetation by reducing plant growth

rates, increasing plant susceptibility to disease, reducing reproductive capacity, or reducing ability to compete with nonnative species. Construction-generated dust is considered a temporary indirect impact. Implementation of APM BIO-2 (Construction-Related Plans) would require the preparation and implementation of a Dust Control Plan, minimizing indirect dust impacts on native vegetation and plant species.

Construction activities could also result in changes to existing hydrology regimes and geomorphic processes. Vegetation clearing, grading, and compaction associated with Project construction could increase the rate, volume, and sediment load of storm water runoff traveling offsite. Changes in hydrology could indirectly impact surface-water-dependent plant species, and could result in increased erosion and rates of scouring the desert habitats surrounding the Project site, including *Parkinsonia florida-Olneya tesota* alliance. Changes to existing hydrology regimes and geomorphic processes are considered permanent indirect impacts. Implementation of APM BIO-2 (Construction-Related Plans) would require the preparation and implementation of a Storm Water Pollution Prevention Plan (as also required under Mitigation Measure WATER-1, which would minimize any construction-related erosion.

Finally, removal of vegetation within the Study Area would lead to fragmentation of existing habitats. Habitat fragmentation results in isolated patches of formerly connected habitats which usually contain fewer species, have proportionally larger perimeters (making them more vulnerable to edge effects), and tend to be more vulnerable to adverse stochastic (random) events such as fires and floods. Habitat fragmentation is considered a permanent indirect impact. Implementation of APM BIO-3 (Construction-Related BMPs) would minimize the direct and indirect loss of native and sensitive vegetation by limiting impacts to only areas that need to be disturbed, thereby minimizing habitat fragmentation. Related measures include Mitigation Measures VEG-8 (Avoidance of Biological Resources During Construction), VEG-9 (Special-Status Plant measures), and VEG-10 (Measures for Riparian Habitat and State Waters), which require biological construction monitoring, and avoiding and minimizing construction-related impacts to vegetation, jurisdictional waters, and special-status species.

Jurisdictional Waters and Wetlands

The state jurisdictional watercourse areas, along with the footprints of the action alternatives, are shown in Figure 4.3-1. The Alternative 1 footprint encompasses approximately 26.2 acres of watercourses, including 6.3 acres of FP1 and 19.4 acres of FP2, potentially jurisdictional dormant channels within FP2, and potentially jurisdictional abandoned channels. Actual impacts to these areas, including the precise locations, areas, and volumes of soil disturbance, are unknown, pending development of a detailed grading plan for this area. Mitigation measure VEG-10 (Measures for Riparian Habitat and State Waters) requires compensation for impacts, at a ratio to be determined by CDFW. Both areas are situated on the edge of the Project, and could potentially be avoided by detailed Project design. If the areas are avoided as a result of final design, no impacts would occur, and no mitigation would be required. If final design shows that the areas would be impacted, overlays of permanent and temporary construction areas, volumes of soil disturbance, and restoration and mitigation plans would be provided to CDFW as part of the Streambed Alteration Agreement application.

Table 4.3-2. Comparison of Direct Impacts to CDFW Jurisdictional Watercourse

CDFW Jurisdictional Watercourse	Alternative 1 (acres)	Alternative 2 (acres)	Alternative 3 (acres)
Watercourse FP1 (and Associated Dormant Channels)[1]	6.3	0	0
Watercourse FP2 (and Associated Dormant Channels)	19.4	0	0
Watercourse FP3	0.04	0	0
Abandoned Channels	**0.46**	**0.39**	**0.36**
Total	**26.2**	**0.39**	**0.36**

1 – The FP1 watercourse is coincident with the *Parkinsonia florida – Olneya tesota* alliance, and is also mapped as a critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems by Kenney (2017).

The Federal jurisdictional delineation identified 41,932 linear feet of potentially Federally jurisdictional areas, consisting of either ephemeral riverine intermittent streambed (40,349 linear feet) or excavated ephemeral riverine intermittent streambed (1,583 linear feet). However, the Corps determined all of these areas to be intrastate isolated waters with no apparent interstate or foreign commerce connection, and are therefore excluded from Clean Water Act jurisdiction.

Special-Status Plants

Six special-status plant species were documented during rare plant surveys conducted on BLM land in Fall 2012 (September 11 to 19, 2012), Spring 2013 (March 18 to 30, 2013), and Spring 2017 (May 9 to 14, 2017), and on the private inholding in Spring 2015 (March 10 to 12, 2015). None of the species documented are Federally- or state-listed under FESA or CESA; therefore, impacts to listed special-status species are not anticipated.

Potential direct impacts to non-listed special-status plant species during construction activities include removal or accidental crushing of plants, bulbs, or seeds. The numbers of existing individuals of each non-listed special-status plant species that would be removed during construction of Alternative 1 are presented in Table 4.3-3. Table 4.3-3 also includes the numbers of individuals that would be removed under the other Project alternatives to facilitate comparison.

One of the species that would be directly impacted, Harwood's eriastrum, is a BLM Sensitive species. Alternative 1 would directly impact 510 documented occurrences of the Harwood's eriastrum, including 433 within the solar facility and 77 along the gen-tie line. In addition to the occurrences, Table 4.3-3 also shows the acreage of direct impact to occupied and potential Harwoods eriastrum habitat. Within 250 feet of these documented occurrences, Alternative 1 would directly impact 110 acres of occupied habitat. As shown in Figure 3.3-8, the remainder of the Project area was identified as suitable habitat in the DRECP model, and is therefore considered to be potential habitat. Alternative 1 would directly impact 3,660 acres of this potential habitat.

There is a chance that additional special-status species could emerge within the Alternative 1 footprint prior to construction (especially annual species). If present, these species would be directly impacted as well. Implementation of APM BIO-4 (Vegetation Resources Management

Plan), and Mitigation Measures VEG-8.1, VEG-9(A), and VEG-9(B), would require identification and avoidance of occurrences of special-status plants, where practicable.

Potential indirect effects to special-status plants are similar to those described above for native vegetation. Most special-status plant species are threatened by the introduction and spread of invasive nonnative plant species. Invasive nonnative plant species outcompete and displace special-status species, thereby resulting in population declines. Construction-generated dust can adversely affect special-status plants by reducing the rates of metabolic processes, such as photosynthesis and respiration. Alteration of hydrology regimes and geomorphic processes could limit resources for special-status plant species in certain habitats such as areas of the *Parkinsonia florida-Olneya tesota* alliance and sand dunes. Lastly, fragmentation of remaining populations of special-status plant species could disrupt gene flow, and remaining populations would be more vulnerable to adverse stochastic events and edge effects such as invasion of nonnative species. Implementation of APM BIO-5 (Integrated Weed Management Plan) would mitigate the indirect impacts from invasive weeds by requiring the finalization and implementation of an Integrated Weed Management Plan, thereby minimizing disruption of the natural native species population dynamics.

Potential indirect effects to special-status plant species could also occur if the Project were to interfere with the flow of sediment or moisture to their habitat. Habitat for some of the special-status plant species, including the Harwoods eriastrum, is associated with sand deposits, which are present in both alluvial and eolian deposits in the Project area. The floodplain area designated as FP1, shown in Figure 4.3-1, roughly corresponds to the *Parkinsonia florida-Olneya tesota* vegetation alliance mapped by BLM, and is also mapped as a ponding area that is critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems by Kenney (2017). As shown in Tables 4.3-1 and 4.3-2, Alternative 1 would not directly impact the *Parkinsonia florida-Olneya tesota* vegetation alliance, but would directly impact the 6.3 acres of the FP1 watercourse. This direct impact could affect the function of the area as a sand source and stabilizing moisture for sand dune systems, resulting in an indirect impact to occupied or potential habitat for the Harwoods eriastrum.

Table 4.3-3. Summary of Direct Impacts to Special-Status Plant Species

Special Status Plants by Project Component		Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action
Solar Plant Site					
Abrams' Spurge	Individual Occurrences	21	1	0	0
Desert Unicorn-Plant	Individual Occurrences	584	300	315	0
Harwoods Eriastrum	Individual Occurrences	433	0	0	0
	Occupied Habitat Acreage[1]	80 acres	1 acres	0 acres	0 acres
	Potential Habitat Acreage[2]	3,634 acres	2,697 acres	1,963 acres	0 acres
Harwoods Milkvetch	Individual Occurrences	10,420	9,507	9,507	0
Ribbed Cryptantha	Individual Occurrences	34,064	0	0	0

Table 4.3-3. Summary of Direct Impacts to Special-Status Plant Species

Special Status Plants by Project Component		Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action
Utah Vine Milkweed	Individual Occurrences	0	0	0	0
Gen-Tie Line, Communications Line, and Temporary Work Areas Outside of Fence					
Abrams' Spurge	Individual Occurrences	0	0	0	0
Desert Unicorn-Plant	Individual Occurrences	0	0	0	0
Harwoods Eriastrum	Individual Occurrences	77	77	77	0
	Occupied Habitat Acreage[1]	30 acres	34 acres	34 acres	0 acres
	Potential Habitat Acreage[2]	26 acres	50 acres	50 acres	0 acres
Harwoods Milkvetch	Individual Occurrences	0	0	0	0
Ribbed Cryptantha	Individual Occurrences	30,170	30,178	30,178	0
Utah Vine Milkweed	Individual Occurrences	0	0	0	0

1 – Occupied Harwoods eriastrum habitat based on 250 foot buffer surrounding individual occurrences.
2 – Potential Harwoods eriastrum habitat based on modeled suitable habitat that is not occupied.

Cacti

Three species of cactus were documented within the Study Area during rare plant surveys: silver cholla (106 individuals documented), common fish hook cactus (11 individuals documented), and barrel cactus (1 individual documented). None of these species are considered special-status species. Species of yucca were not documented during rare plant surveys, and no cacti were documented on the 160-acre private inholding portion of the Study Area. Direct and indirect impacts to the cacti are identical to those described above for special-status plant species (i.e., direct removal/crushing, competition from invasive nonnative species, dust, alteration of hydrology regimes and geomorphic processes, and fragmentation of populations). The exact locations of cacti found on-site were not recorded. However, implementation of APM BIO-4 (Vegetation Resources Management Plan) would require the salvage and relocation of all cacti that would otherwise be impacted by Alternative 1.

Operation and Maintenance

Native Vegetation Alliances

Operation and maintenance of Alternative 1 would not result in direct impacts to native and sensitive vegetation alliances beyond those described above for construction. However, operation and maintenance would result in indirect impacts to native and sensitive vegetation alliances. As discussed above for construction, indirect impacts to vegetation alliances could occur if the Project were to interrupt the movement of sand across the Project area.

Invasive nonnative plant species are opportunistic and often establish on disturbed soils, such as those along access roads, within transmission line corridors, and within solar facilities where areas of exposed bare ground are maintained. Vehicles and crews present during operation and maintenance could inadvertently introduce seeds and/or parts of invasive species, thus facilitating their spread into intact vegetation alliances. Implementation of APM BIO-5 (Integrated Weed Management Plan) would mitigate the impacts associated with the spread of invasive weeds by requiring the finalization and implementation of an Integrated Weed Management Plan, thereby minimizing the effects of invasive weeds on native and/or sensitive vegetation alliances.

Dust generated from vehicle travel on dirt access roads during operation and maintenance could also indirectly impact native vegetation. As discussed above for construction, accumulation of dust on plants can reduce the rates of metabolic processes such as photosynthesis and respiration thereby resulting in degradation of vegetation alliances. Implementation of APM BIO-2 (Construction-Related Plans) would require the preparation and implementation of a Dust Control Plan, minimizing indirect dust impacts on native vegetation and plant species.

Once constructed, existing hydrology regimes and geomorphic processes would likely be altered for the duration of ROW operation. The compacted and developed site could increase the rate, volume, and sediment load of storm water runoff traveling offsite. Additionally, the developed site could result in disruption of geomorphic processes (e.g., sand transportation) essential to the function and integrity of certain desert habitats and species (e.g., Mojave fringe-toed lizard). Implementation of APM BIO-2 (Construction-Related Plans) and Mitigation Measure WATER-1 would require the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which would minimize any construction-related erosion and changes in site hydrology.

Indirect impacts could occur if the Project were to directly impact sand and moisture sources, or were to affect wind patterns. Adverse impacts to Coachella Valley fringe-toed lizard habitat due to interference with sand sources were documented by Griffiths et al. (2002). Human alterations to the episodic flow from Whitewater River and Morongo Creek in Riverside County near Palm Springs have included channelization, groundwater recharge facilities, gravel mining, roads, railroads, and residential development. These changes have degraded eolian sand dune habitat by redirecting sand to other locations and thereby reducing the volume of wind-blown sand into habitat for the Coachella Valley fringe-toed lizard (Griffiths et al. 2002).

Although Griffiths et al. (2002) documented the relationship between modifications to fluvial depositional areas and degradation of downwind eolian sand habitat, this relationship between sand sources, the Project, and eolian sand habitat does not appear to be the same in the Project area. The onsite sand deposits and habitat are primarily located on the western, upstream portion of the Project area, and the Project facilities are located downstream of both the source areas and the occupied habitat. The Project is not likely to affect fluvial deposition within these upstream areas to the west.

Although the Project is not likely to affect fluvial transport of sand to adjacent vegetation alliances or known occupied habitat west of the site, it could potentially affect eolian transport of sand to these areas. As discussed above for construction, the floodplain area designated as FP1 has been mapped as a ponding area that is critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems by Kenney (2017). Alternative 1 would

directly impact 6.3 acres of this area. The significance of this area or other areas on the Project site, in supporting vegetation alliances through acting as a sand and moisture source is unknown, but it is possible that long-term occupation of the land area by a solar facility could affect this function of the area, and thus result in an indirect impact to vegetation alliances.

An indirect impact to vegetation alliances could also occur if the occupation of the land area by the project could potentially impede future expansion or migration of onsite sand deposits. Potter and Weigand (2016) documented that inactive areas within dune fields can become active within a very short timeframe, such as within the timeframe of the life of the Project. Although Kenney (2017) concludes that dunes within the Project area are inactive, the fact that inactive areas within Palen Dunes underwent substantial changes within a short timeframe indicates that such changes in the Project area are possible. If the onsite dune systems were to expand within the timeframe of the Project, it is possible that vegetation alliances associated with the systems could also expand. Modification of wind patterns associated with Project development could either hinder or facilitate this expansion.

Special-Status Plants

Operation and maintenance of Alternative 1 would not result in direct impacts to special-status plant species beyond those described above for construction. However, operation and maintenance could result in indirect impacts to special-status plant species occurring offsite. Potential indirect effects to special-status plants resulting from operation and maintenance are similar to those described above for native vegetation alliances.

Operation and maintenance could result in the introduction and spread of invasive nonnative plant species, which could threaten the survival of special-status plant populations surrounding the developed site. Implementation of APM BIO-5 (Integrated Weed Management Plan) would mitigate the indirect impacts from invasive weeds by requiring the finalization and implementation of an Integrated Weed Management Plan, thereby minimizing the effects of invasive species on special-status plants.

The potential for operation of the Project to indirectly impact habitat for the Harwood's eriastrum is similar to the analysis of indirect impacts to vegetation alliances, discussed above. As demonstrated by Potter and Weigand (2016) at Palen dunes, there is the potential for inactive areas within dune fields to become active within a very short timeframe. If this were to occur, then the occupation of the land area by a solar project could either hinder or facilitate expansion of occupied Harwoods eriastrum habitat. As the Alternative situated closest to the known occupied habitat for the Harwoods eriastrum, the potential for these indirect impacts to occur is higher under Alternative 1 than Alternatives 2 or 3.

Cacti

Operation and maintenance of Alternative 1 would not result in direct impacts to special-status plant species beyond those described above for construction. Indirect impacts to the cacti resulting from operation and maintenance are identical to those described above for special-status plant species. Implementation of APM BIO-5 (Integrated Weed Management Plan) would mitigate the indirect impacts from invasive weeds by requiring the finalization and implementation of an Integrated Weed Management Plan, thereby minimizing the effects of invasive species on cacti.

Decommissioning

Decommissioning of Alternative 1 would generally be considered beneficial to vegetation resources given that development would be removed and restoration of the site would be possible. Decommissioning activities are anticipated to only directly affect areas that were previously disturbed during installation of the facilities. Thus, the direct removal of native vegetation alliances, jurisdictional waters and wetlands, special-status plants, and cacti is not anticipated during decommissioning activities. It is expected that indirect impacts during decommissioning would be similar to those described for construction of Alternative 1. Potential indirect impacts to vegetation alliances, jurisdictional waters and wetlands, special-status plant populations, and cacti include generation of dust and colonization of the site by invasive nonnative plant species during and following site decommissioning. Implementation of APMs BIO-2 (Construction-Related Plans) and BIO-5 (Integrated Weed Management Plan) would require the preparation and implementation of a Dust Control Plan and an Integrated Weed Management Plan, respectively. Effective implementation of these plans would minimize the effects on botanical and wetland resources from dust and invasive species during decommissioning.

4.3.3.2 Alternative 2: Resource Avoidance Alternative

As shown in Table 4.3-1, the types of impacts that would occur under the Resource Avoidance Alternative would result in the direct and permanent loss of all special-status plants and vegetation alliances within the disturbance footprint, and indirect impacts to vegetation resources would be similar to those discussed for the Proposed Action. Alternative 2 would not directly impact the *Parkinsonia florida – Olneya tesota* alliance identified within the Project area. Alternative 2 would directly impact 14 acres of the 171.4 acres of the *Pleuraphis rigida* alliance identified within the Project area. This is a reduction from the 40 acres of the *Pleuraphis rigida* alliance associated with Alternative 1. Similar to Alternative 1, implementation of APMs BIO-2 (Construction-Related Plans), BIO-3 (Construction-Related BMPs), and BIO-5 (Integrated Weed Management Plan), and Mitigation Measures VEG-8 (Avoidance of Biological Resources During Construction), VEG-10 (Measures for Riparian Habitat and State Waters), WIL-4, WIL-9, WIL-10, and WIL-12 would minimize the direct and indirect impacts to vegetation alliances.

The state jurisdictional watercourse areas, along with the footprints of the action alternatives, are shown in Figure 4.3-1. Table 4.3-2 provides the acreages of FP1, FP2, and FP3 encompassed by the Proposed Action and Alternatives 2 and 3. The Alternative 2 footprint completely avoids the FP1 and FP2 watercourses and their associated dormant channels. However, the Alternative 2 footprint directly impacts 0.39 acres of potentially jurisdictional abandoned channels. Actual impacts to these channels, including the precise locations, areas, and volumes of soil disturbance, are unknown, pending development of a detailed grading plan for this area. Mitigation measure VEG-10 (Measures for Riparian Habitat and State Waters) requires compensation for impacts, at a ratio to be determined by CDFW.

Anticipated direct impacts to special-status plants of Alternative 2 are presented in Table 4.3-3. Under this alternative, impacts would occur to the same special-status plant species as identified for Alternative 1, but with an overall reduction in the number of individuals and acreage of habitat impacted for each species type. The Resource Avoidance Alternative would result in reduced impacts to Abrams' spurge (a decreased impact of approximately 57 percent, relative to

the Proposed Action), desert unicorn-plant (a decreased in impact by 37 percent), Harwood's eriastrum (an 85 percent decrease), Harwood's milkvetch (an 8.7 percent decrease), and ribbed cryptantha (a 56 percent decrease).

Alternative 2 would directly impact 78 documented occurrences of the Harwood's eriastrum, including 1 within the solar facility and 77 along the gen-tie line. In addition to the occurrences, Table 4.3-3 also shows the acreage of direct impact to occupied and potential Harwoods eriastrum habitat. Within 250 feet of these documented occurrences, Alternative 2 would directly impact 35 acres of occupied habitat. As shown in Figure 3.3-8, the remainder of the Project area was identified as suitable habitat in the DRECP model, and is therefore considered to be potential habitat. Alternative 2 would directly impact 2,747 acres of this potential habitat.

Potential indirect effects to special-status plant species could also occur if the Project were to interfere with the flow of sediment or moisture to their habitat. Habitat for some of the special-status plant species, including the Harwoods eriastrum, is associated with sand deposits, which are present in both alluvial and eolian deposits in the Project area. The floodplain area designated as FP1, shown in Figure 4.3-1, roughly corresponds to the *Parkinsonia florida-Olneya tesota* vegetation alliance mapped by BLM, and is also identified as a ponding area that is critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems by Kenney (2017). As shown in Tables 4.3-1 and 4.3-2, Alternative 2 would not directly impact the *Parkinsonia florida-Olneya tesota* vegetation alliance or the FP1 watercourse. For comparison, Alternative 1 would directly impact 6.3 acres of the FP1 watercourse.

Similar to Alternative 1, implementation of APMs BIO-4 (Vegetation Resources Management Plan) and BIO-5 (Integrated Weed Management Plan), and Mitigation Measure VEG-9 (Special Status Plant measures) would avoid and minimize impacts to special-status plant species.

4.3.3.3 Alternative 3: Reduced Project Alternative

As shown on Table 4.3-1, the types of impacts that would occur under the Reduced Project Alternative would result in the direct and permanent loss of all special-status plants and vegetation alliances within the disturbance footprint, and indirect impacts to vegetation resources would be similar to those discussed for the Proposed Action. Alternative 3 would not directly impact the *Parkinsonia florida – Olneya tesota* alliance identified within the Project area. Alternative 3 would directly impact 14 acres of the 171.4 acres of the *Pleuraphis rigida* alliance identified within the Project area. This is a reduction from the 40 acres of the *Pleuraphis rigida* alliance associated with Alternative 1. Similar to Alternative 1 and Alternative 2, implementation of APMs BIO-2 (Construction-Related Plans), BIO-3 (Construction-Related BMPs), and BIO-5 (Integrated Weed Management Plan), and Mitigation Measures VEG-8 (Avoidance of Biological Resources During Construction), VEG-10 (Measures for Riparian Habitat and State Waters), WIL-4, WIL-9, WIL-10, and WIL-12 would minimize the direct and indirect impacts to vegetation alliances.

The state jurisdictional watercourse areas, along with the footprints of the action alternatives, are shown in Figure 4.3-1. Table 4.3-2 provides the acreages of FP1, FP2, and FP3 encompassed by the Proposed Action and Alternatives 2 and 3. The Alternative 3 footprint completely avoids the FP1 and FP2 watercourses and their associated dormant channels. However, the Alternative 3 footprint directly impacts 0.36 acres of potentially jurisdictional abandoned channels. Actual impacts to these channels, including the precise locations, areas, and volumes of soil disturbance,

are unknown, pending development of a detailed grading plan for this area. Mitigation measure VEG-10 (Measures for Riparian Habitat and State Waters) requires compensation for impacts, at a ratio to be determined by CDFW.

Anticipated direct impacts to special-status plants of Alternative 3 are presented in Table 4.3-3. Under this alternative, impacts would occur to the same special-status plant species as identified for Alternative 1, but with an overall reduction in the number of individuals impacted for each species type. The Reduced Project Alternative would result in reduced impacts to Abrams' spurge (a decreased impact of approximately 57 percent, relative to the Proposed Action), desert unicorn-plant (a decrease in impact by 40 percent), Harwood's eriastrum (an 85 percent decrease), Harwood's milkvetch (an 8 percent decrease), and ribbed cryptantha (a 56 percent decrease).

Alternative 3 would directly impact 77 documented occurrences of the Harwood's eriastrum, including 0 within the solar facility and 77 along the gen-tie line. In addition to the occurrences, Table 4.3-3 also shows the acreage of direct impact to occupied and potential Harwoods eriastrum habitat. Within 250 feet of these documented occurrences, Alternative 3 would directly impact 34 acres of occupied habitat. As shown in Figure 3.3-8, the remainder of the Project area was identified as suitable habitat in the DRECP model, and is therefore considered to be potential habitat. Alternative 3 would directly impact 2,013 acres of this potential habitat.

Potential indirect effects to special-status plant species could also occur if the Project were to interfere with the flow of sediment or moisture to their habitat. Habitat for some of the special-status plant species, including the Harwoods eriastrum, is associated with sand deposits, which are present in both alluvial and eolian deposits in the Project area. The floodplain area designated as FP1, shown in Figure 4.3-1, roughly corresponds to the *Parkinsonia florida-Olneya tesota* vegetation alliance mapped by BLM, and is also identified as a ponding area that is critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems by Kenney (2017). As shown in Tables 4.3-1 and 4.3-2, Alternative 3 would not directly impact the *Parkinsonia florida-Olneya tesota* vegetation alliance or the FP1 watercourse. For comparison, Alternative 1 would directly impact 6.3 acres of the FP1 watercourse.

Similar to Alternative 1 and Alternative 2, implementation of APMs BIO-4 (Vegetation Resources Management Plan) and BIO-5 (Integrated Weed Management Plan), and Mitigation Measure VEG-9 (Special Status Plant measures) would avoid and minimize impacts to special-status plant species.

4.3.4 Application of CEQA Significance Thresholds

For the purposes of CEQA compliance, the significance of each identified impact of Alternative 1 has been determined. The CEQA Lead Agency is responsible for determining whether an impact is significant and is required to adopt mitigation measures to minimize or avoid each significant impact. BIO-4 is not applicable to vegetation resources; therefore, this threshold is not addressed in this section. BIO-4, along with other CEQA thresholds applicable to wildlife resources are addressed in Section 4.4, *Biological Resources – Wildlife.*

BIO-1) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS?

Construction, operation and maintenance, and decommissioning of Alternative 1, 2, and 3 would result in direct and indirect impacts to the following non-listed special-status species: Abrams' spurge, desert unicorn-plant, Harwood's eriastrum, Harwood's milkvetch, and ribbed cryptantha. Direct impacts to these species resulting from Alternatives 1, 2, and 3 are quantified in Table 4.3-3. Potential direct and indirect impacts to special-status plant species would be less than significant with implementation of APMs BIO-1 (Environmental Inspection and Compliance Monitoring Program and Plan), BIO-3 (Construction-Related BMPs), BIO-4 (Vegetation Resources Management Plan), and BIO-5 (Integrated Weed Management Plan), as well as Mitigation Measures VEG-1 through VEG-5 (requirements for biological monitoring), and VEG-6 through VEG-10 (various resource protection plans and impact avoidance measures).

BIO-2) Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS?

As shown in Table 4.3-1, the Project alternatives would not directly impact the *Parkinsonia florida – Olneya tesota* alliance, which is identified in DRECP as microphyll woodland. There would be no impacts.

BIO-3) Would the Project have a substantial adverse effect on Federal protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marshes, vernal pools, and coastal areas) or any state-protected jurisdictional areas not subject to regulation under Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means?

The Federal jurisdictional delineation indicated that potential waters were isolated, therefore not under CWA jurisdiction. The Alternative 1 footprint encompasses approximately 26.2 acres of watercourses, including 6.3 acres of FP1 and 19.4 acres of FP2, potentially jurisdictional dormant channels within FP2, and potentially jurisdictional abandoned channels. The footprints for Alternatives and 3 completely avoid the FP1 and FP2 watercourses and their associated dormant channels, but directly impact 0.39 and 0.36 acres of potentially jurisdictional abandoned channels, respectively. Actual impacts to these areas, including the precise locations, areas, and volumes of soil disturbance, are unknown, pending development of a detailed grading plan for this area. Mitigation measure VEG-10 (Measures for Riparian Habitat and State Waters) requires compensation for impacts, at a ratio to be determined by CDFW. Both areas are situated on the edge of the Project, and could potentially be avoided by detailed Project design. If the areas are avoided as a result of final design, no impacts would occur, and no mitigation would be required. If final design shows that the areas would be impacted, overlays of permanent and temporary construction areas, volumes of soil disturbance, and restoration and mitigation plans would be provided to CDFW as part of the Streambed Alteration Agreement application. Impacts would be less than significant with mitigation through VEG-10.

BIO-5) Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Alternatives 1, 2, or 3 would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Regional resource planning documents prepared by Federal, state, and local agencies were reviewed, including the CDCA Plan, the NECO amendment to the CDCA Plan, the Riverside County General Plan, and USFWS Recovery Plans. These documents were reviewed to confirm that the proposed Project would not conflict with and would have no impact on any local policies or ordinances protecting biological resources.

BIO-6) Would the Project conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan?

Alternatives 1, 2, or 3 would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. This is because no conservation plans (local, regional, or state) encompass the Study Area. Alternatives 1, 2, or 3 would have no impact on adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans.

BIO-7) Would the Project substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species?

Alternatives 1, 2, and 3 would not substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species. Based on the available data specific to the Project area and the surrounding region (project-specific surveys, state and Federal database records analysis, and coordination with the resource agencies), no rare or threatened plant species would be impacted or threatened by Alternatives 1, 2, or 3. While the associated impacts to 3,575 acres of the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances and 40 acres of the *Pleuraphis rigida* alliance would also impact portions of the various plant species populations that occur within the development footprint of the solar facility and gen-tie line under Alternative 1, those affected vegetation alliances and plant species have relatively wide distributions throughout the Sonoran desert, and would not be eliminated or reduced in numbers below self-sustaining levels. Implementation of the APMs and Mitigation Measures discussed previously for impacts to vegetation alliances would also provide impact avoidance, minimization, and compensation measures to offset any population-level impacts to plant species. Impacts would be less than significant. Additional analysis of CEQA Significance Threshold BIO-7 is provided for wildlife resources in Section 4.4.

Impacts to 2,607 acres of the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances and 14 acres of the *Pleuraphis rigida* alliance associated with Alternative 2 are less than what would occur under Alternative 1; impacts to 1,872 acres of the *Larrea tridentata* and

Larrea tridentata-Ambrosia dumosa alliances and 14 acres of the *Pleuraphis rigida* alliance associated with Alternative 3 are less than what would occur under Alternative 1. Therefore, the anticipated impacts to plant species populations that occur within the Alternative 2 footprint or the Alternative 3 footprint for the solar facility and gen-tie line would be commensurately lower as well. As such, those affected vegetation alliances and plant species would not be eliminated or reduced in numbers below self-sustaining levels. Implementation of the APMs and the Mitigation Measures discussed previously for impacts to vegetation alliances would also provide impact avoidance, minimization, and compensation measures to offset any population-level impacts to plant species. Impacts would be less than significant. Additional analysis of CEQA Significance Threshold BIO-7 is provided for wildlife resources in Section 4.4.

4.3.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.3 would be maintained. No vegetation alliances, plant species dependent upon those habitats, or jurisdictional waters would be lost through development of the Project area, no disturbance of site soils would occur, and no gen-tie line would be constructed. Therefore, Alternative 4 would not result in any impacts associated with natural vegetation alliances.

4.3.6 Cumulative Impacts

This cumulative impact analysis evaluates the effects of existing and reasonably foreseeable future projects that threaten plant alliances on the Palo Verde Mesa and adjacent Palo Verde Valley. This scale was selected for the analysis of cumulative effects to better understand the contribution of local projects to effects on sensitive resources near the Project site. In addition to construction-related impacts, the Project would have ongoing operational impacts to biological resources. Therefore the temporal scope of the cumulative effects analysis for sensitive vegetation alliances includes the construction, operation and maintenance, and decommissioning phases of the Project.

Existing conditions within the area of cumulative effects analysis, described in Section 3.3, reflect a combination of natural conditions, as well as the effects of past and present actions. Urban, residential, and agricultural development in the Blythe area has resulted in removal of natural desert vegetation in the Palo Verde Valley and on Palo Verde Mesa. In recent years, commercial-scale solar power projects, identified in Section 4.1, have contributed to this cumulative impact. Some projects, such as the BMSP and the private land portion of the DQSP, are proposed on abandoned agricultural lands, so do not contribute additional displacement of native vegetation alliances. Other renewable energy projects, including the Modified BSPP, MSEP, Palen, and RE Crimson projects, as well as the majority of land areas associated with the DQSP, are proposed/being developed on previously undisturbed land, and therefore do contribute to cumulative impacts. Development of these projects could contribute to habitat loss and fragmentation and barriers to gene flow. The introduction of nonnative plant species has also contributed to habitat degradation, population declines, and range contractions for many special-

status plant species (Boarman 2002). Combined with the effects of historical grazing and military training, and fragmentation of habitat from highway and aqueduct construction, the renewable energy projects have the potential to further reduce and degrade native plant populations. Although these projects have undergone, or would undergo, environmental permitting and analysis under NEPA, CEQA, and/or other Federal and state laws to evaluate project-level environmental impacts, even after mitigation of project-level impacts, these projects would collectively contribute to impacts on sensitive resources. In the context of this large-scale habitat loss, the Project would contribute to the cumulative loss and degradation of habitat for desert plants in the cumulative analysis area.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

Native Vegetation Alliances

The development of numerous large-scale projects, such as the other solar generation facilities identified in Tables 4.1-1 and 4.1-2, would result in the long-term conversion of desert habitat to industrial and commercial uses. Table 4.3-4 presents the total acreage of vegetation communities within the geographic scope and the cumulative impacts on each community type from existing and foreseeable future projects. These acreages were calculated using the list of cumulative projects that are located in the Palo Verde Valley and lower Chuckwalla Valley. Note that most previous projects have presented their analyses in terms of vegetation communities, while the current Project is evaluated as vegetation alliances. Therefore, the approximate correlations of the communities and the alliances are presented.

A total loss of 8.4 percent of the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances, 1.6 percent of the *Parkinsonia florida-Olneya tesota* alliance, and 5.2 percent of the *Pleuraphis rigida* alliance in the cumulative analysis area is projected to occur as a result of existing and foreseeable future projects. As shown in Table 4.3-4, implementation of Alternative 1 would contribute 10.8 percent of the cumulative impact to the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances, Alternative 2 would contribute 7.8 percent of the impact to the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances, and Alternative 3 would contribute 6.1 percent of the impact to the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances. Associated contributions to the *Pleuraphis rigida* alliance would be 1.7 percent for Alternative 1, and 0.6 percent for Alternatives 2 and 3. The *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances and the *Pleuraphis rigida* alliance are not identified as a BLM or CDFW sensitive vegetation community.

Preparation and implementation of the VRMP (to restore temporarily disturbed areas), Decommissioning and Reclamation Plan, and other plans as required in APM BIO-2 (Construction-Related Plans) and BIO-4 (Vegetation Resources Management Plan), and the implementation of Mitigation Measures VEG-7 (Biological Resources Mitigation Implementation and Monitoring Plan), VEG-8 (Avoidance of Biological Resources During Construction), VEG-10 (Measures for Riparian Habitat and State Waters), WIL-4, WIL-9, WIL-10, and WIL-12, would ensure that the loss of the *Parkinsonia florida-Olneya tesota* alliance habitat from the DQSP is adequately compensated for and equivalent habitat would be protected off-site. Implementation of these measures would reduce the Project's contribution to a

cumulative impact on sensitive natural alliances, and the Project's contribution would not be cumulatively considerable (impact BIO-2).

Table 4.3-4. Cumulative Impacts to Vegetation Alliances

Vegetation Community[1]	Vegetation Alliance	Acreage within Study Area[1]	Impacts of Present and Future Projects[1]	Impacts of Alternative 1	Impacts of Alternative 2	Impacts of Alternative 3
Sonoran creosote bush scrub	*Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances	403,579 acres	33,748 acres (8.4% of total)	3,575 acres (10.6% of total cumulative impact)	2,607 acres (7.7% of total cumulative impact)	1,872 acres (5.5% of total cumulative impact)
Desert dry wash woodland	*Parkinsonia florida-Olneya tesota* alliance	108,335 acres	1,743 acres (1.6% of total)	0 acres (0% of total cumulative impact)	0 acres (0% of total cumulative impact)	0 acres (0% of total cumulative impact)
Stabilized Sand Dune	*Pleuraphis rigida* alliance	37,823 acres	2,257 acres (5.2% of total)	40 acres (1.7% of total cumulative impact)	14 acres (0.6% of total cumulative impact)	14 acres (0.6% of total cumulative impact)

Source:
1 – Sources of acreage of impacts from past and potential future projects was obtained from Table 4.3-5 in McCoy EIS (BLM 2012b), specific acreage reported in completed environmental documents (MSEP, Modified BSPP, and BMSP), and the Proposed Action acreages for DQSP. Values from other environmental documents were reported as vegetation communities, not alliances.
2 – Acreage includes an assumption that all impacts of the additional projects for which specific acreages are not reported will occur in the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances.

Special-Status Plant Species

As discussed above, the development of numerous large-scale projects, such as other wind and solar generation facilities would result in a substantial long-term conversion of desert habitat to industrial and commercial uses, which would remove habitat for many special-status plant species and cacti. Therefore, the loss of this habitat is anticipated to result in cumulative impacts on populations of many special-status plant species and cacti. As shown in Table 4.3-4, the past, present, and reasonably foreseeable future projects are expected to impact less than 10 percent of the available vegetation habitat in the Study Area, and the contribution of the Proposed Action ranges from 0 to 12.6 percent of the cumulative impact. In addition, preparation and implementation of the Vegetation Resources Management Plan (to restore temporarily disturbed areas), Decommissioning and Reclamation Plan, and other plans as required in APM BIO-2 (Construction-Related Plans) and BIO-4 (Vegetation Resources Management Plan), and the implementation of Mitigation Measures VEG-7 (Biological Resources Mitigation Implementation and Monitoring Plan), VEG-8 (Avoidance of Biological Resources During Construction), VEG-10 (Measures for Riparian Habitat and State Waters), WIL-4, WIL-9, and WIL-10 provide for the salvage of rare plants and cacti, avoidance of special-status plants whenever possible, and compensatory mitigation. Provided the ROW grant is not extended

beyond the 30 year operational period, site restoration following decommissioning would minimize the loss of special-status plant species and protect similar habitat off-site. Through implementation of these measures, the Project's contribution to a cumulative impact on special-status plant species would not be cumulatively considerable (impact BIO-1).

Local Policies or Ordinances Protecting Vegetation Resources

The Project is not proposed within the boundaries of any adopted habitat conservation plan or natural community conservation plan. The Project site is within the CDCA and is within the planning boundaries of the NECO Plan amendment to the CDCA Plan. The Project was planned and designed in coordination with BLM with the intent of providing consistency with the NECO Plan and CDCA Plan. The Project would not contribute to a conflict with any local policies or ordinances protecting biological resources (impact BIO-5) or with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan (impact BIO-6).

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The overall cumulative impacts associated with implementation of Alternative 2 would be similar in type as described for Alternative 1. However, since Alternative 2 disturbance footprint is relatively smaller in size, the contribution to cumulative impacts would also be commensurately decreased. The decrease in the contribution to cumulative impacts to the *Pleuraphis rigida* alliance from implementation of Alternative 2 is substantial compared to Alternative 1, since there would be a decrease of approximately 26 acres (or a 65 percent decrease) of the *Pleuraphis rigida* alliance impacted with this alternative. Similarly, the contribution to cumulative impacts on common and other special-status species would also occur with the implementation of Alternative 2. However, the decreased impact footprint relative to Alternative 1 would also result in a similar decrease associated with Alternative 2's contribution to those impacts. The APMs and Mitigation Measures outlined for Alternative 1 would also be pertinent for Alternative 2. Implementation of these measures would reduce impacts to sensitive wildlife species and their habitat and provide that impacted habitat is adequately mitigated with equivalent habitat that would be protected off-site.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The overall cumulative impacts associated with implementation of Alternative 3 would be similar in type as described for Alternatives 1 and 2. However, since Alternative 3 disturbance footprint is relatively smaller in size, compared to Alternatives 1 and 2, the contribution to cumulative impacts would also be commensurately decreased. The decrease in cumulative impacts to the *Pleuraphis rigida* alliance from implementation of Alternative 3 is substantial compared to Alternative 1, since there would be a decrease of approximately 26 acres (or a 65 percent decrease) of the *Pleuraphis rigida* alliance impacted with this alternative. The contribution to cumulative impacts to the *Pleuraphis rigida* alliance is the same between Alternatives 2 and 3. The APMs and Mitigation Measures outlined for Alternative 1 would also be pertinent for Alternative 3. Implementation of these measures would reduce impacts to

sensitive wildlife species and their habitat and provide that impacted habitat is adequately mitigated with equivalent habitat that would be protected off-site.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. Alternative 4 would not contribute to cumulative impacts to vegetation resources.

4.3.7 Residual Impacts

The Proposed Action and other action alternatives would cause adverse impacts to vegetation resources, eliminating most of the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances and the *Pleuraphis rigida* alliance within the disturbance area of Alternative 1. Alternatives 2 and 3 have relatively fewer impacts to vegetation resources, but would still result in the loss of special-status species and important desert habitats. As discussed in the sections above, the recommended avoidance and minimization measures as well as compensatory mitigation would effectively offset direct, indirect, and cumulative impacts in varying, but unquantified degrees and assure compliance with state and Federal laws. It is expected that some residual adverse effects would remain after mitigation measures have been applied, including net losses in waters of the state and vegetation resources.

4.4 Biological Resources - Wildlife

4.4.1 Methodology for Analysis

This section analyzes potential impacts to wildlife resources from construction, operation and maintenance, and decommissioning of the Proposed Action and Alternatives. This analysis of potential impacts relies on results of literature reviews and biological surveys (as summarized in Section 3.4, *Biological Resources – Wildlife*) and coordination with appropriate permitting agencies including the USFWS and CDFW. Acreages calculated for impacts were based on the best information available at the time of publication of the Draft PA/EIS/EIR. A summary of the overall acreages of disturbance associated with each Alternative is provided in Table 4.4-1. As noted in Section 4.3, all ground disturbance activity is considered a permanent impact for the purposes of this analysis due to the long time period for natural revegetation to occur in the desert.

4.4.1.1 CEQA Significance Criteria

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the Project would result in a significant impact pursuant to CEQA. These thresholds of significance are based on Appendix G of the state CEQA Guidelines and the County of Riverside CEQA Environmental Assessment Form. A biological resources impact is considered significant if implementation of the proposed Project would do any of the following:

BIO-1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS.

BIO-2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.

BIO-3) Have a substantial adverse effect on Federal protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marshes, vernal pools, and coastal areas) or any state-protected jurisdictional areas not subject to regulation under Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.

BIO-4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

BIO-5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

BIO-6) Conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan.

BIO-7) Substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal

community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

BIO-2 and BIO-3 are not applicable to wildlife resources; therefore, this threshold is not addressed in this section. BIO-2 and BIO-3, along with other CEQA thresholds applicable to vegetation resources are addressed in Section 4.3, *Biological Resources – Vegetation.*

4.4.2 Applicant-Proposed Measures

No APMs specific to wildlife are proposed. APM BIO-1 through APM BIO-5, discussed in Section 4.3, *Biological Resources – Vegetation*, are also applicable measures to avoid and minimize impacts to wildlife resources.

4.4.3 Direct and Indirect Impacts

A summary of the overall acreages of disturbance associated with each alternative is provided in Table 4.4-1. Impacts associated with Alternative 1 include the disturbance of 3,714 acres of habitat on the solar plant site, 54 acres in the gen-tie corridor, and 2 acres associated with the buried telecommunications line and possible above-ground electrical service line (Table 4.4-1). An additional 61 acres would be temporarily impacted by construction of the access road, and temporary construction areas, for a total of 3,831 acres of habitat disturbance. Acreages calculated for impacts were based on the best information available at the time of publication of the Draft PA/EIS/EIR for the ROW and temporary disturbance areas. For the gen-tie line, temporary disturbances would be associated with string pulling sites and construction around poles. Some vegetation in temporarily disturbed areas (e.g., the string pulling sites) would be crushed by equipment, but these areas would not be otherwise disturbed. Long-term impacts outside of the solar plant site would be caused by transmission pole and tower footprints and access roads. All ground-disturbing activities within the solar plant site are assumed to be permanent in this analysis.

Table 4.4-1. Summary of Long-Term and Temporary Habitat Disturbance

Project Component	Project Alternative Disturbance Area (Acres)		
	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative
Solar Arrays	3,714	2,698	1,912
Gen-tie Line	54	81	81
Telecommunications Line	2	2.8	2.8
Total Permanent Project Area	3,770	2,782	2,047
Temporary Area for Construction	61	63.6	65
Total Disturbance Acreage	3,831	2,845	2,112

Table 4.4-2 summarizes the special-status wildlife species that either have been observed to occur in the Study Area for the Project or alternatives, or are expected to occur based upon the presence of suitable habitat and known species ranges. Potential roosting habitat for pallid bat and California leaf-nosed bat are known from mines and caves near the solar plant site, but no

suitable roosting locations were identified within the limits of the site. The habitat requirements for each species are described in detail in Section 3.4.

Table 4.4-2. Potential for Special-Status Wildlife Species to Occur within Each Alternative Area

Special Status Wildlife Species	Project Alternative		
	Alternative 1 Proposed Action	**Alternative 2 Resource Avoidance Alternative**	**Alternative 3 Reduced Project Alternative**
Amphibians			
Couch's spadefoot toad	Low	Low	Low
Reptiles			
Mojave desert tortoise	Present	Present	Present
Mojave fringe-toed lizard	Present	Present	Present
Coachella Valley fringe-toed lizard	Absent	Absent	Absent
Birds			
Cooper's hawk	Present (foraging only)	Present (foraging only)	Present (foraging only)
Western burrowing owl	Present	Present	Present
Elf owl	Low	Low	Low
Golden eagle	Moderate (foraging only)	Moderate (foraging only)	Moderate (foraging only)
Ferruginous hawk	Present (non-breeding)	Present (non-breeding)	Present (non-breeding)
Swainson's hawk	Present (non-breeding)	Present (non-breeding)	Present (non-breeding)
Vaux's swift	Present (non-breeding)	Present (non-breeding)	Present (non-breeding)
Western snowy plover	Moderate (foraging only)	Moderate (foraging only)	Moderate (foraging only)
Northern harrier	Present	Present	Present
Peregrine falcon	Present (foraging only)	Present (foraging only)	Present (foraging only)
Loggerhead shrike	Present	Present	Present
Vermillion flycatcher	Moderate	Moderate	Moderate
Bendire's thrasher	Moderate	Moderate	Moderate
Crissal thrasher	Moderate	Moderate	Moderate
Le Conte's thrasher	Present	Present	Present
Mammals			
Pallid bat	Present (foraging only)	Present (foraging only)	Present (foraging only)
Townsend's big-eared bat	Moderate	Moderate	Moderate
Western mastiff bat	Present (foraging only)	Present (foraging only)	Present (foraging only)
Pocketed free-tailed bat	Present (foraging only)	Present (foraging only)	Present (foraging only)
Western red bat	Moderate (foraging only)	Moderate (foraging only)	Moderate (foraging only)
California leaf-nosed bat	Moderate (roosting/foraging)	Moderate (roosting/foraging)	Moderate (roosting/foraging)
Cave myotis	Present (foraging only)	Present (foraging only)	Present (foraging only)
American badger	Present	Present	Present
Desert kit fox	Present	Present	Present

Source: Ironwood Consulting Inc., 2016

Table 4.4-3 summarizes the estimated number of special-status wildlife species present within the footprints of the Proposed Action and alternatives. The potential direct and indirect impacts of each action alternative on wildlife are discussed in Sections 4.4.3.1 to 4.4.3.3. Direct impacts on wildlife are considered to include injury or death to an individual, habitat loss or degradation, adverse effects on movement, increased predation, and disturbance from noise, light, or dust. Examples of potential indirect impacts include habitat degradation through the introduction of invasive species, or increased predation due to site conditions during the construction and operation and maintenance phases of the Project.

Table 4.4-3. Summary of Direct Impacts to Special-Status Wildlife Species

Special Status Wildlife by Project Component		Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action
Solar Plant Site					
Mojave Desert Tortoise	Tracks	0	0	0	0
Mojave Fringe-toed Lizard	Individual Occurrences	107	0	0	0
	Occupied Habitat Acreage[1]	64 acres	0 acres	0 acres	0 acres
	Potential Habitat Acreage[2]	3,650 acres	2,698 acres	1,963 acres	0 acres
Kit Fox	Dens	6	5	5	0
Gen-Tie Line, Communications Line, and Temporary Work Areas Outside of Fence					
Mojave desert tortoise	Tracks	1	1	1	0
Mojave Fringe-toed Lizard	Individual Occurrences	28	30	30	0
	Occupied Habitat Acreage[1]	15 acres	16 acres	16 acres	0 acres
	Potential Habitat Acreage[2]	41 acres	68 acres	68 acres	0 acres
Kit Fox	Dens	0	0	0	0

1 – Occupied Mojave fringe-toed lizard habitat based on 150 foot buffer surrounding individual occurrences.
2 – Potential Mojave fringe-toed lizard habitat based on modeled suitable habitat that is not occupied.

4.4.3.1 Alternative 1: Proposed Action

Construction

Wildlife Habitat

The removal of habitat under Alternative 1 would have a direct effect on wildlife species through habitat loss (see below for separate discussions of impacts on special-status wildlife species and wildlife movement and breeding). Impacts include the disturbance of 3,770 acres of habitat on the solar plant site (3,714 acres), gen-tie line (54 acres), and buried telecommunications line and possible above-ground electrical service line (2 acres) (Table 4.4-1). An additional 61 acres would be temporarily impacted by construction of the access road, and temporary construction areas.

Construction of the Project would increase noise, night lighting, and fugitive dust that could disturb common and special-status wildlife species near the construction area. Many species are sensitive to visual and noise disturbances that could cause wildlife to alter foraging and/or

breeding behavior and avoid suitable habitat in adjacent areas. Night lighting also could attract wildlife to the site, disrupting their normal pattern of behavior. During construction, nighttime task lighting would be used only as necessary. In addition, implementation of dust control mitigation measures discussed in Section 4.2, *Air Resources*, would reduce impacts associated with dust.

As discussed in Section 4.3, *Biological Resources - Vegetation*, Project construction also has the potential to introduce invasive plant species outside of the Project site, which could result in the degradation of wildlife habitat outside of the solar plant site and linear corridors.

Mojave Desert Tortoise

As shown in Figure 3.4-1, signs of Mojave desert tortoise were found primarily on the north-central portion of the Project solar plant site, north and northwest of the private inholding (tortoise carcass or parts thereof), and within the linear corridors (one incidental observation of tortoise tracks). Of the vegetation alliances onsite, only the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances are considered to be potential Mojave desert tortoise habitat, because the sand dunes south of I-10, along the northern portion of Alternative 1, are sandier and provide less favorable habitat for tortoises. Therefore, Table 4.3-1 shows that the Project would have a direct impact to 3,575 acres of suitable Mojave desert tortoise habitat. All six of the documented locations of tortoise sign (carcasses) shown in Figure 3.4-1 would be within the Project area.

Since no live Mojave desert tortoises were documented during protocol level surveys for the species, the USFWS population estimate methodology cannot be used to calculate the population density for the Alternative 1 site. The nearby MSEP was documented as having a low tortoise population density (0.2 adult tortoises per square mile of habitat). However, the MSEP is located closer to the McCoy Mountains and the associated alluvial fans at the base of the mountains, which the DRECP has identified as having relatively higher value to the Mojave desert tortoise within the McCoy valley. Since the Project area is relatively more distant from the base of the McCoy Mountains, it is assumed that the Alternative 1 Mojave desert tortoise habitat value and associated tortoise population density, is even lower than assumed for the MSEP. However, based on the incidental observation of Mojave desert tortoise tracks at one location along the utility corridor, the Mojave desert tortoise population density was estimated to be approximately 1 adult Mojave desert tortoise for the Alternative 1 Project area. Direct effects could include individual tortoises being crushed or entombed in their burrows, collection or vandalism, disruption of tortoise behavior during construction or operation of facilities, disturbance by noise or vibrations from the heavy equipment, and injury or mortality from encounters with workers' or visitors' pets. Mojave desert tortoises also could be attracted to the construction area by application of water to control dust, placing them at higher risk of injury or mortality. Increased human activity and vehicle travel would occur from the construction and improvement of access roads, which could disturb, injure, or kill individual tortoises. Tortoises are most likely to be killed, injured, or harassed if they have taken shelter under a parked car in order to seek shade or thermal cover, particularly along utility corridors (Boarman 2002).

Foraging opportunities for common raven, kit fox, coyote and other predators would temporarily increase on the Project site during construction. Construction activities are expected to provide food for scavengers and opportunistic feeders. Potential sources of increased predator base include inappropriately discarded food trash, increases in equipment-related wildlife mortality,

and the availability of water sources, which tend to draw species that prey on Mojave desert tortoise.

Common raven populations in some areas of the Mojave Desert have increased over 1,000 percent from 1968 to 1988 in response to expanding human use of the desert, largely as a result of human-caused land alterations that have increased and stabilized food, water, and nesting site availability to ravens (Boarman 2002; Boarman and Berry 1995). Project construction, operation, and maintenance could temporarily increase raven and coyote presence in the Project area.

Ravens capitalize on human encroachment and expand into areas where they previously were absent or in low abundance. Ravens habituate to human activities and are subsidized by the food and water, as well as roosting and nesting resources, that are introduced or augmented by human encroachment. The City of Blythe and the nearby airport provide food, water features, and roosting/nesting substrates (buildings, signs, lamps, and utility poles) that otherwise would be unavailable. This development near the Project provides year-round water and trash subsidies for the raven as well as nesting opportunities.

It is anticipated that the existing baseline level of wildlife road kills would increase with Project construction and operation traffic, providing an additional food source that could exacerbate the raven/predator attraction and potentially increase predation pressure on Mojave desert tortoise. Increased vehicle traffic on access roads during the construction period could also increase the risk of tortoise mortality. The potential for increased traffic-related tortoise mortality is greatest along paved roads where vehicle frequency and speed is greatest, though tortoises on dirt roads also could be affected depending on vehicle frequency, speed, and driver attentiveness. Additional unauthorized impacts could occur from casual use of access roads due to unauthorized off-road activities.

The capture, handling, and relocation of Mojave desert tortoises from the Project site following the installation of perimeter wildlife exclusion fencing could result in the harassment and mortality of juvenile and adult Mojave desert tortoises during relocation. As previously discussed, local tortoise densities were assumed to be similar to the estimate for the nearby MSEP, which was determined to be 0.2 adults per square mile. Extrapolated for Alternative 1, it is estimated that 1 adult tortoise occupies the Project site. Therefore, it is assumed that any juvenile and/or adult tortoises could be relocated from the site prior to construction and would be subject to harassment and possibly death or injury. A Mojave desert tortoise translocation area will be selected and approved through the ESA Section 7 consultation process, and via the development of the Project's Desert Tortoise Translocation Plan (Mitigation Measure WIL-2).

Tortoises could die or become injured by capture and relocation if these methods are performed improperly, particularly during extreme temperatures, or if they void their bladders. If multiple Mojave desert tortoises are handled by biologists without the use of appropriate protective measures, pathogens could be spread among the tortoises, both resident and relocated or translocated animals. Relocated tortoises also could be subject to increased risk of predation, increased intraspecific competition, reduced availability of food or water resources, reduced health, exposure to environmental elements, and death. However, the site is not expected to be inhabited by a population of Mojave desert tortoise, but would instead provide an area which tortoises traverse across between the populations in the foothills of the McCoy Mountains (north of the site) and the Mule Mountains (south of the site). The addition of external site fencing could alter tortoise movement by directing tortoises around the fenced perimeter, but would not

be anticipated to change their home range, nor would it be expected to separate individuals from the regional tortoise population.

As discussed in Section 4.3, *Biological Resources - Vegetation*, during and following construction, several invasive plant species could colonize disturbed areas within the solar plant site fencing and spread into adjacent vegetation alliances, thereby reducing habitat values for native plant and wildlife species. The spread of invasive weeds both within and outside of the Project boundary could result in the degradation of additional habitat for the Mojave desert tortoise.

Construction activities are expected to expose fine silt and other erosion-prone soils. This would temporarily increase suspended dust in off-site Mojave desert tortoise habitat, particularly during periods of high wind. Increased dust may have adverse effects on the health and survival of individual tortoises. The exposure of Mojave desert tortoises to dust suppression chemicals, if used, would have unknown effects on tortoise populations.

Mojave Fringe-toed Lizard

Direct impacts to Mojave fringe-toed lizards during construction of the solar facility, gen-tie line, distribution line, and associated access roads would occur due to removal of habitat and accidental mortality of lizards from vehicle strikes. The Mojave fringe-toed lizard has wide distribution in portions of the gen-tie line alignment located south of I-10, with 135 individuals identified in the Alternative 1 Study Area during surveys (107 within the solar facility footprint, 28 along the gen-tie corridor). Within 150 feet of these documented occurrences, Alternative 1 would directly impact 78 acres of occupied habitat. As shown in Figure 3.4-3, the remainder of the Project area was identified as suitable habitat in the DRECP model, and is therefore considered to be potential habitat. Alternative 1 would directly impact 3,692 acres of this potential habitat.

The NECO Plan Amendment to the CDCA Plan (BLM 2002) and Mitigation Measure WIL-10 requires that permanent habitat loss and direct impacts to Mojave fringe-toed lizards shall be subject to compensatory mitigation at a 3:1 ratio, which may include compensation lands purchased in fee or in easement in whole or in part, for impacts to Mojave fringe-toed lizard habitat. Without this mitigation, the project would not be consistent with the land use plan, with which BLM is required to comply. It is uncertain whether sufficient private lands meeting the habitat criteria may be available for purchase. Therefore, compensation required under Mitigation Measure WIL-10 may be accomplished through acquisition and management of off-site habitat or, if suitable compensation habitat is not available, through off-site habitat enhancement and restoration (e.g., by controlling weeds). However, it is also uncertain whether off-site enhancement and restoration can feasibly and effectively restore natural sand transport function and aeolian sand habitat values. Therefore, with implementation of Mitigation Measure WIL-10 to the extent it is feasible, the Proposed Action's direct effects on sand transport may remain only partially mitigated.

Indirect construction impacts include increased predation on lizards by raptors, ravens, and other birds such as loggerhead shrike; the introduction and spread of exotic vegetation species; fragmentation and degradation of occupied dune habitat; and hazards associated with the spraying of herbicides and dust suppression chemicals within occupied habitat. Potential indirect effects to Mojave fringe-toed lizard habitat could also occur if the Project were to interfere with

the flow of sediment or moisture to the habitat. Habitat for the Mojave fringe-toed lizard is associated with sand deposits, which are present in both alluvial and eolian deposits in the Project area. The floodplain area designated as FP1, shown in Figure 4.3-1, roughly corresponds to the *Parkinsonia florida-Olneya tesota* vegetation alliance mapped by BLM, and is also identified as a ponding area that is critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems by Kenney (2017). As shown in Tables 4.3-1 and 4.3-2, the Project would not directly impact the *Parkinsonia florida-Olneya tesota* vegetation alliance, but would directly impact 6.3 acres of the FP1 watercourse. This direct impact could affect the function of the area as a sand source and stabilizing moisture for sand dune systems, resulting in an indirect impact to occupied or potential habitat for the Mojave fringe-toed lizard.

The potential for operation of the Project to indirectly impact habitat for the Mojave fringe-toed lizard is similar to the analysis of indirect impacts to vegetation alliances. As demonstrated by Potter and Weigand (2016) at Palen dunes, there is the potential for inactive areas within dune fields to become active within a very short timeframe. If this were to occur, then the occupation of the land area by a solar project could either hinder or facilitate expansion of occupied Mojave fringe-toed lizard habitat. As the Alternative situated closest to the known occupied habitat for the Mojave fringe-toed lizard, the potential for these indirect impacts to occur is higher under Alternative 1 than Alternatives 2 or 3.

Couch's Spadefoot Toad

The BRTR (Ironwood 2016) identified 27 locations within the Study Area that had standing water at some point between 2008 and 2012. Two of these locations were identified as likely to support the species, due to their extent and association with dry desert wash woodland plant species. One of these was the *Parkinsonia florida-Olneya tesota* alliance area located near the NRG Blythe Solar facility (also identified in Huffman-Broadway [2017] as floodplain FP-1), and the other was located in the buffer outside of the Project area. Both locations were visited after heavy rains between 2008 and 2012 to determine if they held ponded water for more than 8 days, and they were also subjected to monitoring during the monsoon season in the summer of 2013. Neither area was determined to hold ponded water for more than 8 days. Therefore, the potential for occurrence of the species is low. However, there are reports from other projects of the species being present at the CRSS, and there is predicted occupied habitat present onsite in the DRECP suitable habitat model.

If this species is present in the project site, impacts from construction could include loss of habitat and direct mortality during grading and construction. Construction activities that create pits or depressions during the summer rains could attract toads which then would be vulnerable to additional construction impacts. During project construction and operation, Couch's spadefoot toads could be crushed on access roads. To address these potential impacts, Mitigation Measure WIL-12 (Couch's Spadefoot Toad Protection and Mitigation) would require avoidance and minimization measures should occupied habitat be identified during pre-construction surveys.

Nesting Birds

The Proposed Action would result in direct and indirect impacts to nesting bird species protected under Fish and Game Code §§3503.5 and 3511, and the Migratory Bird Treaty Act. Site clearing, vegetation removal, ground disturbance, and construction noise could cause nest abandonment and death of young or loss of reproductive potential at active nests located in or near the Study

Area. Additionally, night lighting during construction has the potential to affect nesting bird species.

Migratory Birds

During construction of the Project, the Applicant proposes to use either ponds covered with wildlife exclusion fencing, or tanks to store water for dust control. If ponds are used, they could provide an attractant to migratory birds. To minimize the potential for such impacts, Mitigation Measure WIL-13 (Development of Ponding Area) requires that the Applicant provide the BLM with an analysis of the feasibility of using tanks, as part of an application for authorization for ponds.

Golden Eagle

The Proposed Action occurs in the breeding range of the golden eagle. Golden Eagle Territory and Occupancy Surveys were conducted within a 10-mile buffer area surrounding the Project site. No nesting territories were documented during the surveys, although a golden eagle was documented soaring over the Study Area. A total of 26 raptor and raven nests were documented within the 10-mile buffer, none of which were verified as active golden eagle nests (Ironwood 2016). A previously active golden eagle nest within the Territory and Occupancy Survey area includes a nest documented during 2010/2011 surveys approximately 21 miles north of the Project in the Big Maria Mountains (Tetra Tech EC, Inc., 2011). A nest location is also identified in DRECP in the McCoy Mountains, approximately 8 miles northwest of the Project. This nest was found to not be active, and there is no information regarding when it was last active.

The Project would likely not result in direct or indirect impacts to golden eagle nests because of the large distance between active nest sites and the Project site. Due to lack of active nests near the Project and low observed prey densities on the site (i.e., 0.0035 black-tailed jackrabbits per acre), golden eagles are expected to forage infrequently within the Alternative 1 site.

Western Burrowing Owl

The most recently available survey data documented 12 unused owl burrows, and an additional four occupied burrows were observed within the Study Area (Ironwood 2016). The two northern occupied burrows are located outside of the Proposed Action footprint, and therefore would not be impacted by Alternative 1. The remaining two occupied burrows are located on the northeast portion of the Study Area, and only one of these burrows is located within the footprint of the solar arrays. It is anticipated that all identified active burrows on the solar plant site would be removed during Project construction and those on the linear corridor would be avoided where feasible. The majority of the Alternative 1 site, excluding the *Pleuraphis rigida* alliance, *Parkinsonia florida-Olneya tesota* alliance, and portions of the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances adjacent to the sand dunes, is considered to provide suitable burrowing owl foraging habitat (Ironwood 2016).

In addition to direct impacts on individual owls and burrows, burrowing owl survival can be indirectly affected by human disturbance and foraging habitat loss even when impacts to individual owls and burrows are avoided. A significant impact to the burrowing owl may occur if there is:

1. Disturbance or harassment within approximately 160 feet of occupied burrows;

2. Destruction of burrows and burrow entrances; and/or
3. Degradation of foraging habitat adjacent to occupied burrows (i.e., an approximately 6.5 acres based on a 300-foot radius around each occupied breeding or resident burrow; CDFW 1995).

American Badger and Desert Kit Fox

Project construction has the potential to injure or kill American badgers and desert kit foxes by crushing them with construction equipment or by crushing den entrances, which would prevent them from escaping. Following the erection of perimeter fencing around the solar plant site and subsequent wildlife clearance surveys, the perimeter fence would limit badger and kit fox access to the main Project site, and consequently would reduce the likelihood of injury on the site during construction. There is also a low risk that individual animals could be inadvertently injured or killed by vehicles on access roads.

Six active kit fox burrows/den complexes were documented with wildlife camera stations within the Alternative 1 site, all within the southern portion of the Study Area (Ironwood 2016), within the proposed solar array fields associated with Alternative 1. Photographic evidence indicated occupation of four burrows/den complexes by one adult individual (unknown whether it was the same adult moving between areas, or multiple individuals), one pair of adults at another burrow/den complex, and a family unit consisting of a breeding pair and three juveniles at the last burrow/den complex. No American badger individuals were documented through direct observation or via wildlife camera stations. However, several instances of badger sign (scat and digs) were recorded on the southern edge of the Study Area (Ironwood 2016).

In late 2011, the first known cases of canine distemper virus (CDV) were observed in desert kit foxes about 20 miles west of Blythe on public lands managed by the BLM and leased to Genesis Solar LLC to construct the Genesis Solar Energy Project site. CDFW believes that the outbreak originated from an infected host animal entering the site, possibly a wild or domestic dog, American badger, or other carnivore. The rapid spread of CDV within the kit fox population was facilitated by the project-related displacement of infected animals from the Genesis site into new kit fox territories. Subsequently, desert kit foxes were captured for disease testing at the First Solar Desert Sunlight, Solar Millennium Palen, Genesis Ford Dry Lake, and at Southern California Edison's CRSS and CDV was identified at the two later sites, which span a distance of about 40 miles on the I-10 corridor within the Chuckwalla Valley (CEC 2012).

The typical practice for solar projects has been to exclude desert kit foxes from project areas during pre-construction clearing of project sites by "passive relocation" methods (i.e., by closing burrows, forcing foxes to locate to new off-site burrows). In the absence of protective measures the Project has the potential to worsen the CDV outbreak by raising kit fox stress levels and causing increased susceptibility to infection, causing increased movement of diseased animals thereby increasing the spread of disease into new areas, or placing healthy kit foxes into contact with off-site infected animals (CEC 2012).

Desert Bighorn Sheep and Burro Deer

The Project site is unlikely to serve as a potential movement corridor for Desert bighorn sheep based on their low numbers in the region. Presently, the Mule Mountains are considered an unoccupied portion of the bighorn's range, and the deme (subpopulation) in these mountains has

been considered lost (BLM 2002). Repopulation in the Mule Mountains could happen naturally (via recruitment from the Chuckwalla Mountains/Little Mule Mountains deme to the west and southwest of the Project and the Mule Mountains) or could happen deliberately via translocation of breeding individuals. The CDFW has successfully re-established bighorn in some ranges in the past. Due to the low likelihood of bighorn sheep from the Project area, the construction phase of the Project would not adversely affect habitat for this species or cause effects to individual sheep or sheep populations.

The Project would not present a complete barrier to movement between mountain ranges as sheep still could disperse around the site to the west, north, and south. Corridors described in the NECO Plan Amendment to the CDCA Plan (BLM 2002) identify potential for bighorn sheep movement from the Mule Mountains south to the Chocolate Mountains and west to the Chuckwalla Mountains. Further, the Project site, due to the width of the valley in which the solar facility would be located, has limited value as a movement corridor.

Direct and indirect construction impacts to burro deer include the loss of foraging habitat in the *Parkinsonia florida-Olneya tesota* alliance, vegetated swales, and the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances, and potential barriers to local and regional deer movement. The Project area has a Very Low or Low habitat intactness in the DRECP habitat intactness model. The Project would not present a barrier to regional movement because deer still could disperse around the site to the west, north, and south.

Special-Status Bats

No bat roosts or colonies were identified within the Project site. The closest known bat colony is located approximately 3.4 miles south of Alternative 1, at the Hodge Mine in the Mule Mountains (Ironwood 2016). All habitats within the solar plant site are suitable for bat foraging. Direct and indirect impacts to bat species are expected if construction activities were to disrupt nighttime foraging activities, as well as loss of foraging habitat.

Operation and Maintenance

Special-Status Amphibians, Reptiles, and Terrestrial Mammals

Special-status amphibians, reptiles, and terrestrial mammals, including Mojave desert tortoises, Mojave fringe-toed lizards, American badgers, and desert kit foxes, may access the Project site during the O&M phase, either by excavating under the perimeter fence or walking through the Project entrances. To minimize the chances for individuals of these species to access the Project site, the Applicant will install Mojave desert tortoise exclusionary fencing at the base of the perimeter security fence and cattle guards at Project entrances. These structures will be inspected quarterly and their integrity maintained, as necessary. Finally, if any terrestrial special-status species gain access to the Project site despite implementation of these minimization measures, the Applicant will ensure that an Authorized Biologist captures and relocates the individual(s) outside of the Project site, coordinating with USFWS and CDFW, as needed.

The presence of employees on the Project site during O&M activities could introduce trash into the area and attract common ravens, coyotes, or other Mojave desert tortoise predators. Increased predation upon Mojave desert tortoises would be an indirect Project impact. Similar impacts would be anticipated to Mojave fringe-toed lizard.

Lighting for the Project could disturb special-status wildlife species in adjacent areas. Night lighting would be provided at the O&M building, the On-Site Substation, the temporary construction staging areas, and on or near each PCS station. All lighting would be kept to the minimum required for safety and security; sensors, motion detectors, and switches would be used to keep lighting turned off when not required; and all lights would be hooded and directed downward to minimize backscatter and off-site light.

Migratory Birds

Operation and maintenance activities are unlikely to result in direct or indirect impacts to nesting bird species protected under the Migratory Bird Treaty Act and the Fish and Game Code. O&M activities could result in active nests being removed from existing facilities if conflicts are identified (e.g., nest locations create a hazardous situation). There is a low chance that nesting bird disturbance could occur in association with the removal or management of vegetation within the solar plant site or other facilities site, or due to foot or vehicle traffic associated with O&M activities. Additionally, night lighting during O&M activities has the potential to affect nesting bird species.

Migrating birds may be adversely impacted due to collision or electrocution associated with the gen-tie line. To reduce this risk, the Applicant proposes to follow the applicable APLIC guidelines in Suggested Practices for Avian Protection on Power Lines (APLIC 2006), and Reducing Avian Collisions with Power Lines (APLIC 2012).

A potential risk to migrating birds is associated with Polarized Light Pollution (PLP), which creates the "lake effect" in which PV panels may mimic the reflective and light polarizing characteristics of water. Migrating water birds may mistake fields of PV panels as water bodies, and consequently be attracted to them. The lake effect has recently been postulated as a causal factor in injuries and mortalities of water birds at some solar facilities in the California Desert. Migrating birds may attempt to land on what they perceive as water, and instead collide with solar panels or other structures, resulting in injury or death. Additionally, some water birds require a running start across a water surface to take off. If these birds successfully land at the solar facility, they will be unable to take off again.

To date, little is known regarding the avian response to reflection or glare from PV solar technology; however, it is likely that glare will affect birds to some degree because the panels would reflect light and images, and might be mistaken for open sky or water. Light reflecting from photovoltaic panels could cause an increase in glare and PLP. PLP caused by anthropogenic structures can alter the ability of wildlife to seek out suitable habitat, detect or elude predators, or effectively navigate using natural polarized light patterns, ultimately affecting dispersal and reproduction. However, available information is not sufficient to allow quantification of the potential hazard of glare. Forecasting the importance of PLP to the survival of avian populations and the integrity and function of ecosystems remains largely speculative (Horvath et al. 2009).

Avian injury and mortality monitoring data for two solar facilities in the region along the I-10 corridor east of Palm Springs were reviewed for potential impacts associated with the Project. These two solar facilities include Desert Sunlight (PV solar, relatively similar to the Project) and Genesis Solar (solar trough). The Desert Sunlight observations were collected over a 5 year period (September 2011 through September 2016), while the Genesis Solar data provided for the

review encompassed a much shorter period of 1 year and 7 months (March 2015 through October 2016). The comparison of raw mortality numbers between the two studies are relatively similar (432 total mortality events at Desert Sunlight, versus 536 at Genesis Solar), but the rate of mortality (7.2 deaths per month for Desert Sunlight versus 28 deaths per month for Genesis) suggests that the solar trough technology associated with the Genesis Solar facility presents a higher risk to birds than the photovoltaic technology of Desert Sunlight, especially considering that the acreage of the Desert Sunlight facility (more than 4,000 acres) is twice the size of Genesis (1,952 acres).

Table 4.4-4. Results of Bird Monitoring at Nearby Solar Facilities[1]

Parameter	Desert Sunlight			Genesis		
Total Mortalities	432			536		
Duration of Monitoring Period (months)	60			19		
Type of Technology	PV			Solar Trough		
Overall Rate of Mortality	7.2/month			28.2/month		
Cause of Mortality	**Total Number**	**Percent of Total**	**Rate per Month**	**Total Number**	**Percent of Total**	**Rate per Month**
Collision with solar panels/ troughs or wires	69	16%	1.15 incidents per month	54	10%	2.8 incidents per month
Predation	22	5%	0.36 incidents per month	5	1%	0.26 incidents per month
Entanglement in netting	1	0.2%	0.02 incidents per month	10	1.8%	0.52 incidents per month
Drowning	12	2.8%	0.2 incidents per month	6	1.2%	0.32 incidents per month
Unknown	328	76%	5.5 incidents per month	461	86%	24.2 incidents per month
Location of Mortality	**Total Number**		**Percent of Total**	**Total Number**		**Percent of Total**
Fence	54		12.5%	70		13%
Building	16		3.7%	21		3.9%
Near Vehicle	3		0.7%	1		0.2%
Water Pond	25		5.8%	117		21.8%
Gen-tie Corridor	96		22.2%	47		9%
PV Panels	192		44.4%	NA		NA
Solar array framework (no panels)	20		4.6%	NA		NA
Powerblock	NA		NA	84		15.7%
Solar trough	NA		NA	162		30.2%
Other/Unknown	26		6%	34		6.3%

1 - The Desert Sunlight observations were collected from September 2011 through September 2016, and the Genesis Solar observations were collected from March 2015 through October 2016.

A summary of the causes of mortality is presented in Table 4.4-4. At each site, the cause for the majority of mortalities was unknown (76 percent at Desert Sunlight and 86 percent at Genesis). Known causes of mortality included collision with solar panels/troughs or wires (16 percent at Desert Sunlight versus 10 percent at Genesis Solar), predation (5 percent versus 1 percent),

entanglement in netting (0.2 percent versus 1.8 percent), and drowning (2.8 percent versus 1.2 percent).

The high rate of unknown causes, which is due to high scavenging rates after death and a lack of necropsies performed on intact carcasses, makes it difficult to directly link solar project components to bird mortalities. Another method of evaluation is to consider mortalities by location. Although this does not prove that a project feature was a cause of mortality, it does suggest areas that may be investigated for their impact on migratory birds in the future.

The review of the locations of mortalities presented in Table 4.4-4 shows that most mortalities at both sites were found within the solar array fields. At Desert Sunlight, 44.4 percent of mortalities were found near PV panels, while 30.2 percent of mortalities were found near the solar troughs at Genesis. The higher percentage of mortalities in the solar field at Desert Sunlight may be a reflection of the fact that this project has an overall lower rate of mortalities than Genesis. In addition to solar trough arrays, the Genesis technology involves a power block that was the location of 15.2 percent of mortalities, and evaporation ponds that were the location of 21.8 percent of mortalities. These features are not associated with the PV technology used at Desert Sunlight, or that proposed for the DQSP Project. Therefore, the percentage of mortalities that occurred near the solar panels was higher than at Genesis, but the overall number and rate of mortalities associated with the solar array fields was much lower.

There were also a substantial percentage of mortalities found at fencelines (12.5% for Desert Sunlight, and 13% for Genesis), gen-tie lines (22.2% for Desert Sunlight, and 9% for Genesis), and water ponds (5.8% for Desert Sunlight, and 21.8% for Genesis). The reason for the relatively higher rate of mortalities at the gen-tie line for Desert Sunlight is unknown. This seems unusual, because the length of the gen-tie line is about the same for each project. The larger percentage of mortalities at water ponds for Genesis reflects the fact that Genesis has permanent evaporation ponds totaling more than 100 acres, while Desert Sunlight had approximately 10 acres of temporary ponds only during construction.

Operation and maintenance of the Project is likely to result in similar direct and indirect impacts to migratory birds moving through the region via collision, drowning, entanglement, or other "unknown" causes (which may or may not be attributable to the solar facility). However, the majority of the migratory birds encountering the Project would not be expected to nest on the facility. In the unlikely event that migratory birds nest at the operating facility, direct or indirect impacts could occur to species protected under the Migratory Bird Treaty Act and the Fish and Game Code. In the mortality monitoring data for the Desert Sunlight operations and maintenance phase, one individual of Ridgway's rail (*Rallus obsoletus*), a Federally-listed endangered species, was documented along an access road. It was recorded in the database in association with a PV panel. However, detailed notes in the monitoring data indicated that the rail carcass was found along a closed road, and that no evidence of impact with a PV panel was found.

While migratory Federally-listed species have the potential for flying through the region, there is only circumstantial evidence that they collide with PV panels in the region. Additionally, a review of the Genesis Solar mortality monitoring data indicates that no species of rail was documented during the 19 months of monitoring data reviewed. Therefore, it is not anticipated that any adverse impacts would occur to Federally-listed migratory birds through collision with any components of the Project. O&M activities could result in active nests being removed from existing facilities if conflicts are identified (e.g., nest locations create a hazardous situation).

There is a low chance that nesting bird disturbance could occur in association with the removal or management of vegetation within the solar plant site, or due to foot or vehicle traffic associated with O&M activities. Night lighting during O&M activities has the potential to affect nesting bird species. Additionally, O&M activities associated with the Proposed Action, such as washing the solar panel arrays, has the potential to directly impact nesting birds through loss of an active nest (including loss of eggs and/or nestlings) or disruption of breeding and nesting behaviors during the migratory bird nesting season.

Golden Eagle

The Project would likely not result in direct or indirect impacts to golden eagle nest sites during O&M activities because the nearest inactive nest site is approximately 8 miles from the Project site, and no active golden eagle nests were documented within 10 miles of the site during the Territory and Occupancy Survey conducted for the Project. Based on avian point counts and focused golden eagle surveys, and the low abundance of prey item density, foraging use of the Study Area is considered low (Ironwood 2016).

The Project gen-tie line would be approximately 3 miles long, and would be sited almost entirely within BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52. The gen-tie line would be included within a 160-foot wide corridor along its 3 mile length. The high voltage line could pose a collision hazard to birds and possibly bats.

A review of the mortality monitoring data from Desert Sunlight and Genesis indicates that no eagle mortality collisions were noted for either of the existing solar facilities. The monitoring data suggest that there is a potential for mortality due to collision with the gen-tie or distribution lines, resulting from regional and local movement of avian species through the area, despite the distance from known golden eagle nests and nesting habitat and the lack of known prey concentrations on the Project site (Ironwood 2016).

The BLM has considered whether development of the DQSP could cause impacts to golden eagles related to the loss of potential foraging habitat. Although it is unknown whether golden eagles that might nest in the McCoy, Little Maria, and Big Maria Mountains in the future would utilize the Project area for foraging, avian point counts, the Territory and Occupancy Survey, and the prey abundance estimate that have been conducted for the Project suggest that golden eagles don't maintain breeding/nesting territories on any portion of the Project, and only infrequently use the area for foraging (Ironwood 2016). Project studies, and data collected from other projects in the region, have determined no active nesting within 10 miles of the Project, and an inactive golden eagle nest approximately 8 miles from the edge of the proposed development. Additionally, the population density of the black-tailed jackrabbit, a prey item of the golden eagle, was estimated to only be 0.0035 rabbits per acre. Furthermore, the habitat that would be disturbed or removed by development of the Project is neither unique nor limiting on the landscape, and does not represent a known prey concentration. Comparable or better foraging opportunities are expected to be available within the surrounding areas. For these reasons, development and operation of the Project is not expected to appreciably disturb the foraging of any eagle pairs within 10 miles of the Project site, and indirect impacts are expected to be negligible.

Western Burrowing Owl

Operation and maintenance actions have a low likelihood to affect burrowing owls because activities would largely occur within the developed solar plant site. Burrowing owls have the potential to return to the Project area, following the completion of construction. However, if the burrowing owl does return to the Project area as a resident species, it would likely inhabit the periphery of the development footprint in either natural burrows or manmade structures (e.g., drainage culverts, debris piles, etc.). O&M activities are not expected to remove burrowing owl breeding habitat, and would occur only on Project access roads and within work areas.

American Badger and Desert Kit Fox

Because new ground disturbance would be minimal during O&M activities, it is unlikely that such activities would injure or kill American badgers or desert kit foxes. A low risk remains that badgers or foxes could be inadvertently injured or killed by vehicles on access roads during O&M activities.

Desert Bighorn Sheep and Burro Deer

Once the Project is constructed, noise and human activity are expected to be similar to pre-Project conditions. The Project site is located in an area that receives minimal public use, Therefore, O&M activities are not expected to have any more effect from vehicular use and human activity than what already occurs in the area.

Development and the associated increases in human activities adjacent to and within occupied Desert bighorn sheep and burro deer habitat have the potential to adversely affect these species by fragmenting habitat areas if located in close proximity to the base of the Mule Mountains; however, Desert bighorn sheep does not currently occupy the Mule Mountains. If reintroduced to the area, the Project would only have a minor impact on the potential regional connectivity corridor for bighorn sheep because the movement corridor is maintained to the west, north, and south of the solar plant site.

Impacts to burro deer during maintenance and operation include minor barriers to local and regional deer movement; however, the Project would not present a barrier to regional movement because deer still could disperse around the site to the west, north, and east. The Project area has a Very Low or Low habitat intactness in the DRECP habitat intactness model.

Special-Status Bats

Night lighting and insect populations close to the ground at the Project site could attract bats to the site. A review of the Desert Sunlight and Genesis mortality monitoring data indicates that very few bats have collided with project buildings, and only one bat mortality was documented along either project's gen-tie/transmission corridor. Bat mortalities documented during the 5 year monitoring period at the Desert Sunlight project site included three total mortalities, one at a transmission tower, one along a fence, and one at a project building. Monitoring at the Genesis project documented a total of 19 bat mortalities, with none along the gen-tie/transmission corridor. Mortalities were concentrated at project buildings and the power blocks, with smaller numbers along fences and at the evaporation pond. Considering the Project more closely resembles Desert Sunlight, it is anticipated that the Project would result in similarly low impacts to bat species.

Decommissioning

Decommissioning is anticipated to only directly affect areas that were previously disturbed during installation of Project facilities. Thus, the direct removal of wildlife habitat is not anticipated for decommissioning activities. Potential direct and indirect effects to wildlife populations during decommissioning are similar to those described for the construction phase of the Project and include wildlife disturbance from noise, light, or dust, and the introduction of invasive plant species by various vectors. Revegetation of the site and removal of exclusion fencing would benefit wildlife in the area; however, the restored wildlife access to large expanses of denuded habitat that lack food, water, and cover could subject special-status species such as Mojave desert tortoises to mortality hazards long after site decommissioning.

4.4.3.2 Alternative 2: Resource Avoidance Alternative

The types of impacts related to construction, operation and maintenance, and decommissioning on wildlife resources under Alternative 2 would be similar to those described for Alternative 1. The main difference in impacts between Alternative 1 and Alternative 2 is that the solar plant site would be smaller, resulting in overall reduced impacts to wildlife habitat. Impacts associated with Alternative 2 include the disturbance of 2,782 acres of habitat for the permanent facilities. An additional 63.6 acres would be temporarily impacted by construction of the access road and temporary construction areas, for a total of 2,845 acres of habitat disturbance. Alternative 2 has a longer gen-tie corridor at 3.89 miles in length, as compared to 2.79 miles for Alternative 1.

Table 4.3-1 shows that Alternative 2 would have a direct impact to 2,607 acres of suitable Mojave desert tortoise habitat. Of the six documented locations of tortoise sign (carcasses) shown in Figure 3.4-1, three would be avoided, and three would be within the disturbance area. Due to the lack of live tortoises documented during protocol-level surveys, it is expected that the tortoise is not a resident species, but rather occasionally traverses portions of the Project site.

Similarly, there are substantially fewer Mojave fringe-toed lizard observations documented within the Alternative 2 footprint, with complete avoidance of the species within the solar plant footprint (Table 4.4-3). Within the gen-tie corridor, the number of direct impacts to Mojave fringe-toed lizard occurrences would be 30, higher than the 28 observed for the Alternative 1 gen-tie corridor. This is because the gen-tie corridor coincides with the Mojave fringe-toed lizard, and is longer under Alternative 2. Within 150 feet of these documented occurrences, Alternative 2 would directly impact 16 acres of occupied habitat. As shown in Figure 3.4-3, the remainder of the Project area was identified as suitable habitat in the DRECP model, and is therefore considered to be potential habitat. Alternative 2 would directly impact 2,766 acres of this potential habitat.

Potential indirect effects to Mojave fringe-toed lizard habitat could also occur if Alternative 2 were to interfere with the flow of sediment or moisture to the habitat. Habitat for the Mojave fringe-toed lizard is associated with sand deposits, which are present in both alluvial and eolian deposits in the Project area. The floodplain area designated as FP1, shown in Figure 4.3-1, roughly corresponds to the *Parkinsonia florida-Olneya tesota* vegetation alliance mapped by BLM, and is also identified as a ponding area that is critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems by Kenney (2017). As shown in Tables 4.3-1 and 4.3-2, Alternative 2 would not directly impact the *Parkinsonia florida-Olneya*

tesota vegetation alliance or the FP1 watercourse. For comparison, Alternative 1 would directly impact 6.3 acres of the FP1 watercourse.

As discussed in Section 4.4.3.1, there are many uncertainties associated with assigning impacts to migratory birds to individual components of solar facilities. Impacts are likely to be associated with bird collisions with Project fencing, gen-tie lines, and PV panels, including potential impacts associated with attraction of migratory birds to the lake effect created by the panels. Although the magnitude of these impacts, and the overall impact on avian populations, is uncertain, avian impacts associated with Alternative 2 would likely be lower than those of Alternative 1, due to the reduced acreage of solar arrays. However, the longer gen-tie corridor of 3.89 miles associated with Alternative 2 has the potential to result in greater operations and maintenance impacts to migratory birds and bats, through collision with tower structures and overhead lines.

The solar array for Alternative 2 would impact five known locations of kit fox dens, reduced from six in Alternative 1. Impacts to wildlife movement would be lower in Alternative 2 than in Alternative 1 due to the smaller amount of habitat that would be impacted. Thus, a greater amount of habitat would be preserved for intermountain and localized, valley floor wildlife movements.

The APMs and mitigation measures for Alternative 2 would be the same as those described under Alternative 1, with adjustments to reduce the amount of off-site compensatory habitat needed to mitigate impacts for Alternative 2.

4.4.3.3 Alternative 3: Reduced Project Alternative

The types of impacts related to construction, operation and maintenance, and decommissioning on wildlife resources under Alternative 3 would be similar to those described for Alternative 1. The main difference in impacts between Alternative 3 and Alternatives 1 and 2 is that the solar plant site would be smaller, resulting in overall reduced impacts to wildlife habitat. Impacts associated with Alternative 3 include the disturbance of 2,047 acres of habitat for the permanent facilities. An additional 65 acres would be temporarily impacted by construction of the access road and temporary construction areas, for a total of 2,112 acres of habitat disturbance. Alternative 3 has a longer gen-tie corridor at 4.18 miles in length, as compared to 2.79 miles for Alternative 1.

Table 4.3-1 shows that Alternative 3 would have a direct impact to 1,872 acres of suitable Mojave desert tortoise habitat. Of the six documented locations of tortoise sign (carcasses) shown in Figure 3.4-1, five would be avoided, and one would be within the disturbance area. Due to the lack of live tortoises documented during protocol-level surveys, it is expected that the tortoise is not a resident species, but rather occasionally traverses portions of the Project site.

Similarly, there are substantially fewer Mojave fringe-toed lizard observations documented within the Alternative 3 footprint, with complete avoidance of the species within the solar plant footprint (Table 4.4-3). Within the gen-tie corridor, the number of Mojave fringe-toed lizard observations would be 30, higher than the 28 observed for the Alternative 1 gen-tie corridor. This is because the gen-tie corridor coincides with the sand dune habitat, and is longer under Alternative 3. Within 150 feet of these documented occurrences, Alternative 3 would directly impact 16 acres of occupied habitat. As shown in Figure 3.4-3, the remainder of the Project area

was identified as suitable habitat in the DRECP model, and is therefore considered to be potential habitat. Alternative 1 would directly impact 2,031 acres of this potential habitat.

Potential indirect effects to Mojave fringe-toed lizard habitat could also occur if Alternative 3 were to interfere with the flow of sediment or moisture to the habitat. Habitat for the Mojave fringe-toed lizard is associated with sand deposits, which are present in both alluvial and eolian deposits in the Project area. The floodplain area designated as FP1, shown in Figure 4.3-1, roughly corresponds to the *Parkinsonia florida-Olneya tesota* vegetation alliance mapped by BLM, and is also identified as a ponding area that is critically important for eolian sand systems as a sand source and stabilizing moisture for sand dune systems by Kenney (2017). As shown in Tables 4.3-1 and 4.3-2, Alternative 3 would not directly impact the *Parkinsonia florida-Olneya tesota* vegetation alliance or the FP1 watercourse. For comparison, Alternative 1 would directly impact 6.3 acres of the FP1 watercourse.

As discussed in Section 4.4.3.1, there are many uncertainties associated with assigning impacts to migratory birds to individual components of solar facilities. Impacts are likely to be associated with bird collisions with Project fencing, gen-tie lines, and PV panels, including potential impacts associated with attraction of migratory birds to the lake effect created by the panels. Although the magnitude of these impacts, and the overall impact on avian populations, is uncertain, avian impacts associated with Alternative 3 would likely be lower than those of Alternatives 1 and 2, due to the reduced acreage of solar arrays. However, the longer gen-tie corridor of 4.18 miles associated with Alternative 3 has the potential to result in greater operations and maintenance impacts to migratory birds and bats, through collision with tower structures and overhead lines.

The solar array for Alternative 3 would impact five known locations of kit fox dens, reduced from six in Alternative 1. Impacts to wildlife movement would lower in Alternative 3 than in Alternatives 1 and 2 due to the smaller amount of habitat that would be impacted. Thus, a greater amount of habitat would be preserved for intermountain and localized, valley floor wildlife movements.

The APMs and mitigation measures for Alternative 3 would be the same as those described under Alternative 1, with adjustments to reduce the amount of off-site compensatory habitat needed to mitigate impacts for Alternative 3.

4.4.4 Application of CEQA Significance Thresholds

For the purposes of CEQA compliance, the significance of each identified impact of Alternative 1, Alternative 2, or Alternative 3 has been determined. The CEQA Lead Agency is responsible for determining whether an impact is significant and is required to adopt mitigation measures to minimize or avoid each significant impact.

BIO-1) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS)?

Construction, operation and maintenance, and decommissioning of Alternatives 1, 2, and 3 could result in direct and indirect impacts to special-status species. Potential construction- and

operation-related direct and indirect impacts to non-listed special-status species occurring within the Study Area could occur as a result of construction activities. Construction of the solar facility, gen-tie lines, new On-Site Substation, access roads, and O&M buildings would require ground-disturbing activities, including clearing and grading for structure installation work areas, and access construction.

Special-status wildlife: Direct impacts to non-listed wildlife species could occur from mortality of individuals by crushing or vehicle collisions during operation and maintenance activities of Alternative 1, Alternative 2, or Alternative 3, nighttime lighting, wildfires, and human presence and activity. Potential construction- and operation-related direct and indirect impacts to special-status wildlife would be potentially significant. APMs BIO-1 (Environmental Inspection and Compliance Monitoring Program and Plan) and BIO-3 (Construction-Related BMPs), in addition to implementing Mitigation Measures VEG-1 through VEG-8, WIL-3 (Project Notification and Reporting), WIL-8 (American Badger and Desert Kit Fox Protection), WIL-9 (Burrowing Owl Protection and Mitigation), and WIL-12 (Couch's Spadefoot Toad Protection and Mitigation) would be implemented to further reduce impacts. Post-mitigation, impacts would be less than significant. All mitigation measures that are required during construction of Alternative 1, Alternative 2, or Alternative 3 to avoid or minimize impacts to biological resources would also be required during decommissioning activities.

Migratory Birds: The potential impacts of Alternatives 1, 2, or 3 on migratory birds, including an evaluation of data from nearby solar projects, are discussed in Section 4.4.3. There is a potential for direct and indirect impacts to occur to migratory birds through crushing of nests during clearing and grubbing, as well as during construction. Other impacts could include collisions with solar arrays and gen-tie line and structures, loss of nesting and foraging habitat, and disruption of normal breeding behaviors in areas adjacent to the Project from increased noise, ambient light at night, and an increase in the level of human encroachment into the vicinity. However, although these impacts are documented, there is a large amount of uncertainty regarding their effect on total population size. As discussed in Section 4.4.3, the cause of most mortalities at nearby solar facilities is unknown, making it difficult to accurately predict the significance of collision mortality. The significance of the lake effect on the survival of avian populations and the integrity and function of ecosystems remains largely speculative (Horvath et al. 2009). Based upon the bird surveys conducted on the site and the data from nearby sites, there is no evidence that the DQSP would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS.

Alternative 2 or Alternative 3 would also not be expected to contribute to any adverse impacts to avian species from PLP, since none of the design features have been connected to such impacts. Similar to Alternative 1, mortality monitoring at the Desert Sunlight and Genesis solar facilities were reviewed, and the data indicate that avian collisions with solar panels and troughs occur, but that the cause of the vast majority of deaths were categorized as "unknown", or due to other factors such as predation, drowning, or entanglement in netting. Therefore, Alternative 2 or Alternative 3 will not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS.

APMs BIO-1 (Environmental Inspection and Compliance Monitoring Program and Plan), BIO-2 (Construction-Related Plans), and BIO-3 (Construction-Related BMPs), as well as Mitigation

Measures WIL-3 (Project Notification and Reporting), WIL-7 (Preconstruction Nest Surveys), WIL-9 (Burrowing Owl Protection and Mitigation), and WIL-12 (Couch's Spadefoot Toad Protection and Mitigation) would be implemented to help reduce any potential impacts during construction and operation and maintenance of the gen-tie line and solar array facility. These measures specify pre-construction surveys to identify the presence of potentially affected individuals, date limits to avoid Project activities when protected individuals are present and/or breeding, distance limits to minimize direct impacts and habitat modification, and documentation and reporting requirements. Through these measures, impacts to individuals and habitat of protected species would be reduced to a level less than significant.

BIO-4) Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Wildlife: Although impacts on wildlife movement are anticipated under Alternatives 1, 2, or 3, these impacts would be less than significant with mitigation. The DRECP identifies wildlife corridors and linkages for use in evaluating impacts to wildlife movement. Figure D-1 of DRECP identifies a desert linkage network for landscape wildlife linkages, Figure D-2 identifies multi-species linkages and ACEC boundaries within the East Riverside DFA, and Figure D-16 identifies Tortoise Conservation Areas and Linkages. The Project area is not situated within any documented important migration routes for any terrestrial wildlife species, and most of the animals expected to move across the Project are considered common in California, with the exception of Mojave desert tortoise. Common species were found on-site in relatively low numbers, as well as in adjacent areas. The Mojave desert tortoise is not a resident species onsite, due to the lack of observations of live tortoises during protocol-level surveys. The incidental observation of tortoise tracks within the gen-tie line corridor north of the sand dunes suggests that the species only occasionally traverses portions of the site.

Regional habitat connectivity would be reduced by implementation of Alternatives 1, 2, or 3. However, much of the land surrounding the site is expected to remain as natural desert plant communities for the foreseeable future, which would allow regional movement by common terrestrial wildlife species, as well as the Mojave desert tortoise, to continue outside the perimeter of Alternatives 1, 2, or 3 without significant impediment once construction is completed.

Operation of Alternatives 1, 2, or 3 would not result in any direct impacts to wildlife movement in addition to those already described for construction. Mitigation Measures WIL-1 (Mojave desert tortoise fencing), WIL-4 (Mojave desert tortoise habitat acquisition), and WIL-9 (burrowing owl habitat acquisition) would reduce remaining potential impacts to a less than significant level by directing wildlife movement around the Project (via the site perimeter fencing), and building upon a consolidated block of conserved open space suitable for maintaining movement corridors (via the Project's habitat acquisition contribution). Post-mitigation, impacts would be less than significant.

Migratory Birds: To the east of the Alternatives 1, 2, or 3 area is the Lower Colorado River Valley. The Lower Colorado River Valley is in the Pacific Flyway, one of the four major migration flyways in North America, and is a globally important bird area (IBA) running from Alaska to Patagonia and stretching inland from the Pacific Ocean to encompass parts of

Montana, Wyoming, Colorado and New Mexico (Audubon 2011). As previously mentioned, migratory bird surveys and the Territory and Occupancy Survey, indicated that both the diversity and density of migratory birds and raptors was relatively lower within the Project site, compared to adjacent areas. However, many bird species migrate at night, including passerines and waterbirds, which may not have been adequately accounted for in the daytime surveys conducted for the Project.

Due to approximately 90,000 acres of existing suitable forage land on irrigated agricultural land within the Palo Verde Valley east of Alternatives 1, 2, or 3, and the distance of the alternatives from the Colorado River, it is assumed that migratory birds would only incidentally use the Alternative 1, 2, or 3 Project areas for forage land, and that these lands are of lesser value and importance for migratory bird foraging compared to lands closer to the River.

Wetlands, lakes, and streams are all documented potential "hot spots" for avian risk due to collision with facilities because water is often used by birds to forage or congregate (APLIC 2006). There is no standing water in the Project area, except briefly following heavy rains. The Applicant has proposed use of ponds to store dust control water during construction. Such ponds would only be authorized following an analysis of the feasibility of using tanks, as specified in WIL-13 (Development of Ponding Area). Potential impacts will be mitigated through APMs BIO-1 (Environmental Inspection and Compliance Monitoring Program and Plan), as well as Mitigation Measure WIL-3 (Project Notification and Reporting). These measures would be implemented to help reduce potential impacts during construction and operation and maintenance of the gen-tie line and solar array facility to less than significant.

BIO-5) Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Alternatives 1, 2, or 3 would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Regional resource planning documents prepared by Federal, state, and local agencies were reviewed, including the CDCA Plan, the RCGP, and USFWS Recovery Plans. These documents were reviewed to confirm that Alternatives 1, 2, or 3 would not conflict with and would have no impact on any local policies or ordinances protecting biological resources.

BIO-6) Would the Project conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan?

Alternatives 1, 2, or 3 would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. This is because no conservation plans (local, regional, or state) encompass the Study Area. Alternatives 1, 2, or 3 would have no impact on adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans.

BIO-7) Would the Project substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate

a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species?

Based on survey work and database searches that were conducted for the Project, signs of one Federally listed threatened species, the Mojave desert tortoise, and the state-listed threatened Swainson's hawk, were documented onsite. Because of the lack of observations of live tortoises or burrows during the protocol-level Project surveys, the Mojave desert tortoise is not expected to be a resident species onsite. However, since it is known from the region along the foothills of the McCoy Mountains (north of the site) and the Mule Mountains (south of the site), the presence of tortoise tracks on the northern edge of the sand dunes along the gen-tie corridor indicates the tortoise occasionally traverses portions of the site. The Swainson's hawk occurs as a foraging species during migration. However, the Swainson's hawk would not be expected to nest onsite. Therefore, Alternatives 1, 2, or 3 would not substantially reduce the number or restrict the range of either of these threatened species.

Based on a review of available information, review of existing databases, reconnaissance surveys and protocol surveys conducted as part of impacts assessment for the DQSP, fifteen non-listed special-status reptile, avian, and mammal species or their sign are associated with Alternatives 1, 2, and 3. These species include the following: Mojave fringe-toed lizard, Cooper's hawk, western burrowing owl, ferruginous hawk, Vaux's swift, northern harrier, peregrine falcon, loggerhead shrike, pallid bat, western mastiff bat, pocketed free-tailed bat, cave myotis, American badger, and desert kit fox.

Habitat destruction is thought to cause greater reductions in bird and other wildlife populations than any other factor, and is still the most serious long-term threat (APLIC 2006). Based on Project migratory bird surveys and Golden Eagle Territory and Occupancy Surveys, overall avian diversity and density is lower within the Project footprint, compared to outside of the Project. While these surveys were not designed to specifically document nesting of non-raptor avian species, no incidental observations of non-raptor avian nesting, nor any direct observation of raptor nesting, have been documented within the Project site. While the Project has not conducted any population viability analyses, the relatively low densities of migratory bird species and other species such as the Mojave desert tortoise, as previously noted, suggests that implementation of the Project would not likely expose any animal species to significant risk with regard to self-sustaining populations. Therefore the construction of Alternative 1 would not substantially reduce the habitat for birds or migratory birds that would cause the population to drop below self-sustaining levels, threaten to eliminate the avian community or substantially reduce the number or restrict the range of endangered, rare, or threatened species.

The direct impact of Alternatives 2 and 3 on occupied and potential Mojave fringe-toed lizard habitat would be reduced compared to Alternative 1. The Alternative 2 and 3 solar plant would completely avoid direct impacts to known fringe-toed lizard locations. Direct impacts to the species along the Alternative 2 and 3 gen-tie routes would slightly increase, relative to Alternative 1.

Various special-status mammal species, including several bat species, as well as the American badger and desert kit fox, might be impacted by the Project. However, no bat roosts were documented within the Project footprint, and direct take of the badger and kit fox would be avoided to the extent feasible through passive relocation. While habitats for these species would be lost, the displaced individuals would be able to utilize adjacent habitats. These species are

present throughout the region. Therefore, the Project would not cause these species populations to drop below self-sustaining levels.

Potential impacts will be mitigated through Mitigation Measures WIL-1 and WIL-2 (Desert Tortoise Surveys and Desert Tortoise Translocation Plan), WIL-7 (Preconstruction Nest Surveys), WIL-8 (American Badger and Desert Kit Fox Protection), WIL-9 (Burrowing Owl Protection and Mitigation), WIL-10 (Compensatory Mitigation for Mojave Fringe-toed Lizard Habitat Losses), and WIL-12 (Couch's Spadefoot Toad Protection and Mitigation). These measures would be implemented to help reduce potential impacts during construction and operation and maintenance of the gen-tie line and solar array facility to less than significant.

4.4.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.4 would be maintained. No disturbance of site soils would occur, and no gen-tie line would be constructed, and therefore Alternative 4 would not result in any impacts associated with biological resources.

4.4.6 Cumulative Impacts

The geographic scope for this cumulative impact analysis considers the incremental effects of the analyzed alternatives relative to other past, present, and reasonably foreseeable projects that affect wildlife. For wildlife resources, the geographic scope of analysis is based on species distribution and landforms surrounding the Project site and the natural boundaries of the resource affected, rather than jurisdictional boundaries.

The analysis considers potential effects at different scales for different species, with the analysis generally concentrating on wildlife resources in the Palo Verde watershed and a portion of the Chuckwalla Valley watershed in eastern Riverside County. This scale was used to analyze cumulative effects on Mojave desert tortoise, Mojave fringe-toed lizard, migratory birds, western burrowing owl, American badger, kit fox, and bat species. The geographic scope for assessing cumulative effects to Mojave desert tortoise and golden eagle were somewhat larger, as described below. In addition to short-term construction impacts, the Project would have ongoing operational impacts on some biological resources. Therefore the temporal scope of the cumulative effects analysis for wildlife includes the construction, operation and maintenance, and decommissioning phases of the Project.

Table 4.4-5. Cumulative Impacts to Wildlife Habitat

Wildlife Species *Cumulative Study Area*	Acreage within Study Area	Impacts of Present and Future Projects	Impacts of Alternative 1	Impacts of Alternative 2	Impacts of Alternative 3
Mojave desert tortoise *Colorado Desert Recovery Unit*	2,600,000 acres	39,444 acres[1] (1.5%)	3,575 acres (9.1% of total cumulative impact)	2,607 acres (6.6% of total cumulative impact)	1,872 acres (4.7% of total cumulative impact)
Mojave fringe-toed lizard *Occupied sand dune/ sand sheet habitat in the Palo Verde Valley*	12,911 acres	228 acres[2] (1.8%)	78 acres (34% of total cumulative impact)	16 acres (7.0% of total cumulative impact)	16 acres (7.0% of total cumulative impact)
Golden eagle[3] *Foraging Habitat within 10 mile buffer*	287,590 acres	39,444 acres[1] (13.7%)	3,831 acres (9.8% of total cumulative impact)	2,845 acres (7.2% of total cumulative impact)	2,112 acres (5.4% of total cumulative impact)
Burrowing owl / American badger/ desert kit fox *BLM-identified habitat in the Palo Verde watershed*	286,084 acres	27,923 acres[1] (9.8%)	3,831 acres (13.8% of total cumulative impact)	2,845 acres (10.2% of total cumulative impact)	2,112 acres (7.6% of total cumulative impact)

Source:
1 – Acreage for Mojave desert tortoise, Golden eagle, and burrowing owl/American badger/Desert kit fox estimated using impacts from Present/Future projects from Table 3.4-2 in Modified Blythe EIS (BLM 2015), which already includes the Proposed Action acreages for DQSP.
2 – Acreage for MFTL estimated from Table 4.4-3 in McCoy EIS (BLM 2012b), plus highest potential acreage (Alternative 1) for DQSP.
3 – Impact is to foraging habitat only

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

A discussion of regional impacts to vegetation alliances and associated wildlife habitat was provided in Section 4.3.6, and is not repeated in this section. This section provides a detailed discussion of the effects of past, present, and future projects to wildlife resources in the Project vicinity.

Those areas in eastern Riverside County where existing and cumulative projects occur or are anticipated provide habitat for numerous special-status wildlife species, including Mojave desert tortoise, Mojave fringe-toed lizard, golden eagle, burrowing owl, American badger, desert kit fox, and Desert bighorn sheep, among others. Tables 4.1-1 and 4.1-2 identify those existing and reasonably foreseeable projects, respectively, in the cumulative effects study area. These include other proposed or approved renewable energy projects, BLM authorized actions or activities, proposed or approved projects within the counties' jurisdictions, and other actions/activities that Lead Agencies consider reasonably foreseeable. Generally, existing and cumulative projects have been sited outside of many sensitive areas that support these species, which include the ACECs, wilderness areas, and other Special Designation areas discussed in Section 4.16. However, substantial wildlife populations occur outside of these managed and protected areas,

and are vulnerable to habitat loss and degradation, or other threats. While the Project is located within the NECO planning area, it is not located within the boundaries of the Chuckwalla Desert Tortoise ACEC, Joshua Tree Desert Tortoise ACEC, or Chuckwalla Unit of Critical Habitat for Mojave desert tortoise.

Land uses in the cumulative analysis area historically have been altered by human activities, resulting in conversion of undeveloped land and habitat loss, fragmentation, and degradation. Reasonably foreseeable future projects that could impact biological resources in the cumulative impacts area characterize overall development trends in the Palo Verde Valley and nearby Chuckwalla Valley. Much of the future development in the area is dominated by renewable energy projects. Major renewable projects require extensive access roads and new transmission lines to tie into the existing electrical grid system.

Other projects in the cumulative study area include several transmission lines and nonrenewable energy development, as well as residential and commercial development. In addition to one-time construction impacts, many of the cumulative projects would have ongoing operational impacts on wildlife resources. Therefore, all projects that might contribute impacts over time in the cumulative area are considered for this analysis. This would include nonrenewable energy, transmission lines, wind power, and solar power projects.

General threats to common and special-status wildlife species in the cumulative effects study area include the fragmentation of habitat from roads and urban development, the effects of historic livestock grazing on wildlife forage structure and availability, the effects of military training activities, and agricultural development. In the context of other existing and reasonably foreseeable projects, the proposed Project has the potential to further reduce wildlife habitat and incrementally degrade adjacent habitat. Thus, the Project would contribute to the cumulative loss and degradation of habitat for Mojave desert tortoise, Mojave fringe-toed lizard, and other species in the Palo Verde watershed.

Wildlife Habitat

The development of numerous large-scale projects such as other solar generation facilities would result in the conversion of wildlife habitat to industrial and commercial uses. Table 4.4-5 presents the estimated area of available wildlife habitat in the cumulative effects study areas, and the cumulative impacts on each species from existing projects and foreseeable future projects. Existing and future impact areas were derived using the list of existing and reasonably foreseeable projects in the Palo Verde Valley and nearby Chuckwalla Valley, as identified in Section 4.1.

The total projected habitat loss in the cumulative study area for wildlife resources includes approximately 1.5 percent of habitat for Mojave desert tortoise, 3.3 percent of habitat for Mojave fringe-toed lizard in the Palo Verde Valley, 13.7 percent of foraging habitat for golden eagle, and 9.8 percent of habitat for burrowing owl, American badger, and desert kit fox (Table 4.4-5). Alternatives 1, 2, and 3 would contribute to cumulative impacts on these resources. However, implementation of APM BIO-1 (Environmental Inspection and Compliance Monitoring Program and Plan), BIO-2 (Construction-Related Plans), BIO-3 (Construction-Related BMPs), and BIO-5 (Integrated Weed Management Plan), along with Mitigation Measures VEG-1 through VEG-8, VEG-10 (Measures for Riparian Habitat and State Waters), WIL-1, WIL-2, and WIL-4 through WIL-10, would reduce impacts to sensitive wildlife species and their habitat and provide that

impacted habitat is adequately mitigated with equivalent habitat that would be protected off-site. With implementation of these Project-specific mitigation and protection measures, implementation of similar measures as part of each project in the cumulative scenario, and compliance with state and Federal laws, the cumulative effects to wildlife habitat between the Project and past, present, and foreseeable projects would be less than significant (impact BIO-1 and BIO-7).

Mojave Desert Tortoise

The cumulative effects study area for Mojave desert tortoise considered existing and future projects in the Colorado Desert Recovery Unit planning area, as defined in the Desert Tortoise Revised Recovery Plan (USFWS 2011a). The Recovery Plan focuses on Mojave desert tortoise populations within each of five distinct recovery units, with the fundamental recovery goal of ensuring sufficient population size and stability within an ample amount of protected habitat in each area. The Colorado Desert Recovery Unit includes the Joshua Tree Desert Tortoise ACEC and Chuckwalla Desert Tortoise ACEC, and includes both the Chuckwalla Valley and Palo Verde Valley. USFWS-designated critical habitat for Mojave desert tortoise occurs within the Chuckwalla Unit, which significantly overlaps the Joshua Tree and Chuckwalla Desert Tortoise ACECs.

While Mojave desert tortoises occur in low densities in the Palo Verde Valley, the Project site is not located within or between lands that are specifically managed for Mojave desert tortoise conservation. The Joshua Tree Desert Tortoise ACEC, Chuckwalla Desert Tortoise ACEC, and designated critical habitat for Mojave desert tortoise are greater than 10 miles west of the Project site and would not be impacted by the Project. A 2.6 million-acre study area was identified for Mojave desert tortoise in the Colorado Desert Recovery Unit, of which approximately 39,444 acres (1.5 percent) would be impacted by future projects (Table 4.4-5). Alternative 1 would contribute approximately 9.8 percent of the total cumulative impact from future projects, affecting about 0.14 percent of available Mojave desert tortoise habitat in the recovery unit. Under Alternative 2 the Project would contribute 7.9 percent of the total impact from future projects, affecting about 0.1 percent of available Mojave desert tortoise habitat. Alternative 3 would contribute approximately 5.2 percent of the total cumulative impact from future projects, affecting about 0.1 percent of available Mojave desert tortoise habitat.

Direct and indirect effects to tortoises and their habitat would be offset through the application of APM BIO-1 (Environmental Inspection and Compliance Monitoring Program and Plan), BIO-2 (Construction-Related Plans), and BIO-3 (Construction-Related BMPs), and the implementation of Mitigation Measures VEG-1 through VEG-8, WIL-1 though WIL-5. The loss of tortoise habitat and direct and indirect effects to this species are anticipated to result in cumulative effects on populations; however, the implementation of the required protection measures that include salvage of Mojave desert tortoises, compensatory mitigation, and site restoration following decommissioning would ensure that the loss of tortoise habitat is adequately compensated for and comparable or higher quality habitat would be protected off-site. With implementation of these measures, it is expected that the contribution of the Project to cumulative effects on Mojave desert tortoises would not be cumulatively considerable (impact BIO-7).

Mojave Fringe-toed Lizard

The analysis of cumulative Project effects to Mojave fringe-toed lizard habitat focused on known and CNDDB-documented populations within the Palo Verde Valley. In these areas, populations are dependent upon areas with fine aeolian sand that occur in association with dunes, margins of dry lakes and washes, and isolated sand patches. The cumulative effects analysis identified approximately 12,911 acres of occupied Mojave fringe-toed lizard habitat in the cumulative study area, of which approximately 228 acres (1.8 percent) occurs in areas where future projects are proposed (Table 4.4-5). Under Alternative 1, approximately 63 acres of occupied habitat would be disturbed for the solar field, and another 15 acres would be disturbed in association with the gen-tie line. This represents approximately 0.6 percent of available Mojave fringe-toed lizard habitat that was identified in the cumulative study area and represents a contribution of 34 percent of the total cumulative effect on this resource. The implementation of APM BIO-1 (Environmental Inspection and Compliance Monitoring Program and Plan), BIO-2 (Construction-Related Plans), and BIO-3 (Construction-Related BMPs), along with Mitigation Measures VEG-1 through VEG-8, and WIL-10 would minimize impacts to sensitive dune and sand sheet habitat and provide suitable compensatory habitat for habitat losses. With implementation of the above-mentioned BMPs, in addition to protection through the implementation of Project mitigation measures, the contribution of the Project to cumulative effects on Mojave fringe-toed lizard would not be cumulatively considerable (impact BIO-7).

Migratory Birds

The construction and operation of large-scale solar generation projects in the region, including Desert Sunlight and Genesis, have contributed to cumulative impacts on migratory bird species through loss of habitat, as well as through increased mortality as a result of the operation and maintenance of the facilities. Based on a review of the mortality monitoring studies for these two solar facilities, it can be inferred that the Project would also contribute to cumulative impacts to migratory birds by increasing impacts associated with collision with the proposed development features. Desert Sunlight contributed to 432 avian and bat mortalities over a 5 year period, while Genesis accounted for 536 mortalities over a period of 1 year and 7 months. Based on the monitoring data for Desert Sunlight and Genesis, the DQSP is likely to contribute to increase avian mortality through collision with PV panels, entanglement in netting, drowning, and an incremental loss of habitat.

Direct impacts to actively breeding birds would be avoided through the implementation of measures that would provide consistency with Fish and Game Code §§3503.5 and 3511, and the Migratory Bird Treaty Act. Under these laws, the removal or disturbance of active nests is prohibited. With implementation of APM BIO-1 (Environmental Inspection and Compliance Monitoring Program and Plan), BIO-2 (Construction-Related Plans), and BIO-3 (Construction-Related BMPs), and Mitigation Measures VEG-1 through VEG-8, WIL-6, WIL-7, WIL-9, and WIL-13 which require a Bird and Bat Conservation Strategy and preconstruction nesting bird surveys, the Project would not impact nesting birds other than those that are individually discussed in this Draft PA/EIS/EIR (e.g., burrowing owl). Other future projects would be required to implement similar measures to ensure compliance with Federal and state bird protection regulations.

Golden Eagle

The cumulative analysis for golden eagle considered the potential for Project impacts to interact with impacts caused by past, present, and reasonably foreseeable future projects within 10 miles of the Project site to cause or contribute to cumulative effects. The 10-mile radius is consistent with USFWS guidance for inventorying golden eagles that occur near a specific project (Pagel et al. 2010).

Based on a review of known and historic golden eagle breeding sites in the 10-mile golden eagle study buffer, none of the cumulative projects would impact golden eagle breeding sites. However, many of the projects are located or proposed within natural habitat that provides foraging opportunities for golden eagles. A GIS-based analysis identified 287,590 acres of potentially suitable golden eagle foraging habitat within 10 miles of the Project site. Within that area, present and future projects, including the DQSP, would impact approximately 39,444 acres (13.7 percent) of this potential foraging habitat. The Proposed Action would contribute 9.8 percent of the total projected cumulative impact.

Following USFWS guidance, the loss of potential golden eagle foraging habitat would be considered significant if losses occurred within 1.0 mile of an active nest. However, no active nests are known within 1.0 mile of the Project and few if any nests are known near other projects considered in the cumulative scenario. Few (if any) impacts are anticipated to golden eagle nesting sites generally because this species tends to regionally nest in remote mountainous areas where no active projects are proposed. Cumulative effects to the golden eagle between the Project and past, present, and foreseeable projects would be less than significant (impact BIO-7).

Western Burrowing Owl, American Badger, and Desert Kit Fox

As characterized by the NECO Plan Amendment to the CDCA Plan (BLM 2002), the Palo Verde watershed provides extensive habitat for western burrowing owl, American badger, and desert kit fox. While each species has its own specific habitat requirements, there is considerable overlap in the types of habitat used by these species. The cumulative analysis of effects to these species focused on potential habitat in the Palo Verde watershed, as mapped in the NECO Plan Amendment to the CDCA Plan. A GIS-based analysis identified approximately 286,084 acres of potential habitat in the Palo Verde watershed. Future projects would impact approximately 27,923 acres (9.8 percent) of potentially suitable habitat within this area that supports the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances and unvegetated desert pavement; with the Proposed Action contributing approximately 13.8 percent of that total cumulative impact (Table 4.4-5).

The cumulative projects implemented in undeveloped areas would presumably result in impacts to burrowing owl, American badger, and desert kit fox similar to the Project. Such effects include the direct loss of suitable habitat, loss of individual animals, or indirect effects from human presence that result in changes to habitat quality during construction, operation and maintenance, and decommissioning. The implementation of measures identified to protect American badger and desert kit fox (WIL-8) and protect burrowing owls and mitigate habitat losses (WIL-9) would reduce Project impacts. With implementation of Project-specific mitigation and protection measures, as well as adherence to BMPs as part of each project in the cumulative scenario, and compliance with state and Federal laws, the cumulative effects to

burrowing owls, American badger, and desert kit fox between the Project and past, present, and foreseeable projects would be less than significant (impact BIO-7).

Desert Bighorn Sheep and Burro Deer

As depicted in Figure 3.4-10, the Project is not located with a Desert bighorn sheep WHMA and would not result in the loss of habitat for this species within a WHMA. Within the Palo Verde Valley, the Project occurs in close proximity to a bighorn sheep WHMA located in the Mule Mountains. Should the Mule Mountains become occupied by this species at a future time, the Project may contribute to cumulative actions that would impact potential bighorn sheep movement corridors.

Habitat Connectivity and Wildlife Movement

Fencing that is proposed around the Project, other local solar projects, and I-10 create barriers to wildlife movement that would alter, but not likely impede, the movement of large wildlife species such as Desert bighorn sheep, burro deer, mountain lion, or other highly mobile species. For these wide-ranging species, the cumulative projects are not expected to present a barrier to regional movement, because these animals have the ability to move outside of the fenceline of the projects. In addition, the largest impact to wildlife movement associated with the cumulative projects is expected to be that posed by I-10. The contribution of the Project to the larger cumulative impact posed by the highway is expected to be minimal (impact BIO-4).

It is anticipated that fencing of the cumulative projects would pose an impediment to movement of smaller species, such as the Mojave desert tortoise, near the project sites. However, the Project site does not overlap with any designated Wilderness Areas, ACECs, Desert Tortoise ACECs, or WHMAs. In addition, the DQSP site was included in the BLM's draft Solar PEIS recommendations for the Riverside East Solar Energy Study Areas due to the area's low potential for substantial resource conflicts relative to other considered locations. The DRECP identifies wildlife corridors and linkages for use in evaluating the application of CMAs for the protection of biological resources. Figure D-1 of DRECP identifies a desert linkage network for landscape wildlife linkages, Figure D-2 identifies multi-species linkages and ACEC boundaries within the East Riverside DFA, and Figure D-16 identifies Tortoise Conservation Areas and Linkages. The Project area is not situated within any of these linkages. The Mojave desert tortoise occurs in low population densities in the Palo Verde Valley, with sparse populations noted in the Project area. It is expected that tortoise habitat located within the cumulative analysis area will continue to support tortoise populations and that tortoises will be physically able to circumnavigate the Project and other foreseeable solar development. Tortoises would not be able to directly traverse the solar project sites, but the remaining adjacent open space is of sufficient size that remaining tortoise populations may be sustained and would not be isolated from the regional population. Additionally, habitat on the sites would be reconnected to adjacent lands during Project decommissioning. With substantial habitat connectivity remaining following the cumulative development scenario, the impediment to wildlife movement presents an adverse, though not substantial impact, to the Mojave desert tortoise.

Direct and indirect effects to tortoises would be reduced and mitigated through the application of APM BIO-1 (Environmental Inspection and Compliance Monitoring Program and Plan), BIO-2 (Construction-Related Plans), and BIO-3 (Construction-Related BMPs), and the implementation

of Mitigation Measures WIL-1 though WIL-10. The contribution of the Project to cumulative impacts on tortoise movement would not be cumulatively considerable (impact BIO-4).

Local Policies or Ordinances Protecting Wildlife Resources

The Project is not proposed within the boundaries of any adopted habitat conservation plan or natural community conservation plan. The Project site is within the CDCA and is within the planning boundaries of the NECO Plan Amendment to the CDCA Plan. The Project was planned and designed in coordination with BLM with the intent of providing consistency with the NECO Plan and CDCA Plan. The Project would not contribute to a conflict with any local policies or ordinances protecting biological resources (impact BIO-5) or with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan (impact BIO-6).

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The overall cumulative impacts associated with implementation of Alternative 2 would be similar in type as described for Alternative 1. However, since Alternative 2 disturbance footprint is relatively smaller in size, the contribution to cumulative impacts would also be commensurately decreased. For the impacts to Mojave desert tortoise, burrowing owl, American badger, and desert kit fox, Alternative 2 would result in a decrease of approximately 980 acres of habitat impacts. This decrease in the scale of the impacts would also represent a similar decrease in the contribution by the Project to cumulative impacts to these species.

The decrease in direct impacts to the Mojave fringe-toed lizard from implementation of Alternative 2 is substantial compared to Alternative 1, since there would be a decrease of approximately 62 acres (or an 80 percent decrease) of occupied Mojave fringe-toed lizard habitat impacted with this alternative. Therefore, the contribution to cumulative impacts would also be decreased. Similarly, the contribution to cumulative impacts on common and other special-status species would also occur with the implementation of Alternative 2.

The APMs and Mitigation Measures outlined for Alternative 1 would also apply to Alternative 2. Implementation of these measures would reduce impacts to sensitive wildlife species and their habitat and provide that impacted habitat is adequately mitigated with equivalent habitat that would be protected off-site.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The overall cumulative impacts associated with implementation of Alternative 3 would be similar in type as described for Alternatives 1 and 2. However, since Alternative 3 disturbance footprint is relatively smaller in size, compared to Alternatives 1 and 2, the contribution to cumulative impacts would also be commensurately decreased. For the impacts to Mojave desert tortoise, burrowing owl, American badger, and desert kit fox, Alternative 3 would result in a decrease of approximately 1,700 acres of habitat impacts compared to Alternative 1, and a decrease of approximately 740 acres relative to Alternative 2. The decrease in the scale of the

impacts would also represent a similar decrease in the contribution by the Project to cumulative impacts to these species.

The decrease in direct impacts to the Mojave fringe-toed lizard from implementation of Alternative 3 is substantial compared to Alternative 1, since there would be a decrease of approximately 62 acres (or an 80 percent decrease) of occupied Mojave fringe-toed lizard habitat impacted with this alternative. Therefore, the contribution to cumulative impacts would also be decreased. The contribution to cumulative impacts on common and other special-status species would also occur with the implementation of Alternative 3.

The APMs and Mitigation Measures outlined for Alternative 1 would also apply to Alternative 3. Implementation of these measures would reduce impacts to sensitive wildlife species and their habitat and provide that impacted habitat is adequately mitigated with equivalent habitat that would be protected off-site.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. Alternative 4 would not contribute to cumulative impacts to wildlife resources.

4.4.7 Residual Impacts

The Proposed Action and the other two action alternatives would impact Mojave desert tortoise habitat, and possibly to Mojave fringe-toed lizard, burrowing owl, and other nesting birds and desert kit fox, which may occur on site. Relatively lesser impacts to American badger and bat species would be anticipated. As discussed in the sections above, the recommended avoidance and minimization measures as well as compensatory mitigation would effectively offset direct, indirect, and cumulative impacts to wildlife resources and assure compliance with state and Federal laws. It is expected that very limited residual adverse effects would remain after mitigation measures have been applied and that these residual impacts, if any, would not be significant.

4.5 Cultural Resources

4.5.1 Methodology for Analysis

4.5.1.1 Introduction

Evaluation of potential impacts of the Proposed Action and alternatives on cultural resources is based in part on review of legal responsibilities established under NEPA (42 USC §§4321, 4331-4335), the NHPA, and other relevant authorities. To carry out NEPA, the Federal government has a "continuing responsibility…to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may…preserve important historic, cultural, and natural aspects of our national heritage…." (42 USC §4331(b)(4)). NEPA requires the Federal agency to take a "hard look" at the impacts on cultural resources associated with a proposed action and alternatives. The analysis takes into account direct, indirect, and cumulative effects.

For purposes of NEPA, this Draft PA/EIS/EIR includes information gathered as part of the NHPA §106 process about historic properties and the potential effects to such properties from the proposed undertakings, i.e., the BLM's decision whether or not to issue the requested ROW grant or approve a CDCA Plan Amendment. Section 106 of the NHPA requires that the agency take into account the effects of undertakings on historic properties, defined as any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP; and to afford the ACHP a reasonable opportunity to comment. The steps of the §106 process are: (1) identification of historic properties within the APE for the proposed undertaking; (2) assessment of the proposed undertaking's potential effects on identified properties; and (3) resolution of any adverse effects. Each step requires consultation with the SHPO, interested Native American tribes, local governments, and other identified consulting parties.

Area of Potential Effects

The regulations implementing NHPA §106 define the APE as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR §800.16(d)). In addition, the APE may be buffered for purposes of cultural resources inventory to facilitate the identification of resources that may be located in proximity to the APE and indirectly affected by a proposed project or to allow for redesign of project components to avoid direct effects to cultural resources. The current APE, including the one-mile buffer for indirect APE and an expanded area to incorporate the Mule Tanks Discontiguous Rock Art District, is illustrated on Figure 3.5-1. SHPO concurred with the APE in 2014. The APE for the Project has been defined as:

1. For direct effects, the APE is defined as all areas where physical Project activities would occur, including the full extent of all Project components and alternatives. This consists of the area included within the ROW grant for the solar energy generating plant and associated facilities, roads, and transmission lines.
2. For indirect effects, the APE is defined as a one-mile buffer beyond the ROW grant, to take into consideration resources whose settings could be adversely affected by the

proposed Project development. In addition, for this Project, the indirect APE has been expanded beyond the one-mile buffer, in response to tribal and archaeological concerns, to address indirect impacts to a NRHP-eligible district located in the vicinity of the Project. There are no adverse impacts to NRHP-eligible or listed sites within the indirect APE.

Alternative 2, the Resource Avoidance Alternative, and Alternative 3, the Reduced Project Alternative, present a reduced Project footprint within the APE described above. Some NRHP- and CRHR-eligible sites are still within the direct APE; however, the Project components have been moved in an attempt to avoid the sites. Although both alternatives would reduce the number of sites that would be directly impacted, there would be indirect impacts to these sites, including making them inaccessible for future research, and surrounding them with Project components such as roads, solar panels, fences, and other structures.

4.5.1.2 Cultural Resources Evaluation of Historical Significance and Effects

A key part of any cultural resources analysis under NEPA and NHPA §106 is to determine whether the cultural resources located within the Project APE are historically significant. Subsequent effects assessments are made for those cultural resources that are determined to be historically significant.

Evaluation of Historical Significance

NHPA §106

Effects on historic properties are considered during Federal undertakings chiefly under NHPA §106 through its implementing regulations, 36 CFR Part 800. This includes consideration of effects on properties of traditional religious and cultural significance to Native American tribes. The §106 process requires Federal agencies to consider the effects of their undertakings on any historic district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP and to afford the ACHP a reasonable opportunity to comment on such undertakings, 36 CFR §800.1(a).

The BLM has made NRHP and CRHR determinations of eligibility and findings of effect for all cultural resources, and has requested SHPO concurrence with those determinations and findings.

Indirect APE

Two NRHP and CRHR listed sites are located within the indirect APE. P-33-000504/CA-RIV-504 and P-33-000773/CA-RIV-773 make up the Mule Tank Discontiguous Rock Art District.

Two additional NRHP- and CRHR-eligible sites are located within the indirect APE. These two sites are transmission lines located within the indirect APE along the southeastern boundary of the DQSP. These lines are the Pilot Knob–Blythe 161-kV transmission line (P-33-11110) and the Blythe–Niland 161-kV transmission line (P-33-012532/CA-RIV-7127H). The Pilot Knob–Blythe 161-kV transmission line (P-33-11110) is a 64.4-mile-long line made of H-frame wooden poles built in 1951 that parallels the 2-mile-long boundary of the DQSP. The Blythe–Niland 161-kV transmission line (P-33-012532/CA-RIV-7127H) is a line of similar wooden-pole H-frame construction built in the 1940s and 1950s and located in the same corridor.

Direct APE

Seventeen additional NRHP- and CRHR-eligible sites are located within the APE. These include three sites (CA-RIV-12028, CA-RIV-343, and CA-RIV-772) that are eligible prehistoric trails that lead into the district. Twelve prehistoric sites (thermal and other rock features) and 2 multi-component sites (1 trail with debris scatter, and 1 artifact and debris scatter) have been determined to be as eligible for the NRHP and CRHR.

According to SRI, CA-RIV-1821 may be related to additional sites as well (CA-RIV-24356, CA-RVI-24307, CA-RIV-24283, CA-RIV-24459, CA-RIV-24508, CA-RIV-24451, and CA-RIV-24385) and further mitigation at these sites may be required. The remaining 266 archaeological and historic resources have been determined not eligible for the NRHP or CRHR.

It is anticipated that a NHPA §106 Memorandum of Agreement (MOA) will be developed for this Project for the purpose of resolving adverse effects to nine historic properties. This number may vary depending on which alternative is chosen and the results of the BLM's consultation with Native American tribes. The MOA will be developed by the BLM in consultation with the ACHP, SHPO, the Applicant, Riverside County, interested Native American tribes, and any other consulting parties, as appropriate. The MOA will describe the adverse effects to the nine historic properties, will include measures to resolve the adverse effects, and must be executed prior to the BLM's issuance of the ROD. Specific measures to resolve adverse effects will be developed in a Historic Properties Treatment Plan (HPTP) and included as an attachment to the MOA. Execution of the MOA will conclude the §106 process.

NEPA

NEPA establishes national policy for the protection and enhancement of the environment. Part of the function of the Federal government in protecting the environment is to "preserve important historic, cultural, and natural aspects of our national heritage." Cultural resources need not be determined eligible for the NRHP as stated in the NHPA to receive consideration under NEPA. NEPA is implemented by CEQ, 40 CFR §§1500-1508. NEPA provides for public participation in the consideration of cultural resources issues, among others, during agency decision-making.

Assessing Effects to Historic Properties

BLM is using the definition of adverse effect in the §106 regulations to assess impacts of the proposed or alternative action for those cultural resources that BLM has identified as historic properties eligible for or listed in the NRHP. The §106 regulations describe an adverse effect as an effect "found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the [NRHP] in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" (36 CFR §800.5(a)(1)). This consideration should apply to all the qualifying characteristics of an historic property. Adverse effects also may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative. Examples of adverse effects include, but are not limited to:

a. Physical destruction, damage, or alteration of all or part of the property;

b. Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the NRHP;

c. Introduction of visual, audible, or atmospheric elements that are out of character with the property or that alter its setting;

d. Neglect of the property, resulting in its deterioration or destruction;

e. Transfer, lease, or sale of the property.

4.5.1.3 CEQA Significance Criteria

Under CEQA, a project is considered to have a significant impact on the environment if it causes a substantial adverse change in the significance of a historical resource. *Substantial adverse change in the significance of a historical resource* means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired or diminished. Furthermore, under CEQA, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Whenever a historical resource (Public Resources Code [PRC] 21084.1 and state CEQA Guidelines 15064.5(a)) or unique archaeological resource (PRC 21083.2) cannot be avoided by project activities, impacts must be addressed and mitigated if feasible, as outlined in state CEQA Guidelines 15126.4 and 15331.

CEQA criteria indicate that a project could have potentially significant impacts to cultural resources if it would:

CUL-1) Cause a substantial adverse change in the significance of a historical resource as defined in Code of Regulations Section 15064.5.

CUL-2) Cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations Section 15064.5.

CUL-3) Disturb any human remains, including those interred outside of formal cemeteries.

Under AB 52, CEQA criteria indicate that a project could have potentially significant impacts to Tribal Cultural Resources (TCRs) if it would:

TCR-1) Cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1 (k)

TCR-2) Cause a substantial adverse change a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1 for the purpose of this paragraph, the lead agency shall consider the significance to a California Native tribe.

As of July 1, 2015, Assembly Bill 52 (AB 52) established new requirements under CEQA to protect tribal cultural resources. AB 52 requires that CEQA analyses consider tribal cultural values, as well as scientific and archaeological values, when determining impacts and mitigation. AB 52 specifies that it is applicable to projects that have a NOP or a notice of negative

declaration filed or mitigated negative declaration on or after July 1, 2015. Because the date of the NOP for the DQSP was March 12, 2015, AB 52 consultation is not applicable to the Project.

4.5.2 Applicant-Proposed Measures

The Applicant has not proposed any APMs related to cultural resources.

4.5.3 Direct and Indirect Impacts

4.5.3.1 Alternative 1: Proposed Action

Construction

Based on the anticipated disturbance below ground and the anticipated above-ground intrusion into the flat landscape, Project activities that have the potential to affect cultural resources include:

1. In areas where cutting and filling is required, this activity would disturb surficial soils.
2. In the solar array fields, foundations for fixed tilt structures would cause ground disturbance down to a maximum depth of 7 feet below grade, and posts for single-axis tracking structures would cause ground disturbance down to a maximum depth of 12 feet below grade. The maximum height of the solar panels would occur under the fixed tilt system, in which the arrays would intrude into the flat landscape to a maximum height of 13 feet above grade.
3. Underground direct current (DC) cables leading to a Power Conversion Station (PCS) would be situated within each array. Trenches excavated for cables would reach a depth of 3 feet.

Ground-disturbing construction activities associated with the Project could directly affect cultural resources by damaging and displacing artifacts. Construction activities could diminish site integrity of historic properties and alter the characteristics that make the properties eligible for the NRHP and/or CRHR. These historic properties, and any additional archaeological sites that are inadvertently discovered during construction, would be located within the full extent of the Project's below-grade impacts (inclusive of foundations and trenches) and above-grade impacts (inclusive of above-ground facilities). In addition, indirect effects to archaeological resources, historic architectural resources, and places of traditional cultural importance could occur. For example, increased site access could result in vandalism or unintentional harm to cultural resources. In addition, flash floods, whose effects would likely be magnified due to soil erosion caused by the proposed Project, could cause disturbance of surface or subsurface cultural resources located on lower gradients than the APE.

As a result of the literature and records searches, archival research, Native American consultation, and field investigations described in Section 3.5, a total of 287 archaeological sites (92 prehistoric, 186 historic-period, 9 multi-component) and 621 isolates (158 prehistoric and 463 historic-period), have been identified within the APE for the Project. Based on Appendix B in the Addendum to the SRI report, two of the sites which make up the Mule Tank Discontiguous Rock Art District are listed on the NRHP. Nineteen additional sites are eligible for the NRHP and CRHR, and may be impacted by the Project through direct or indirect impacts. All of these listed and eligible sites are located on land managed by the BLM. The majority of the eligible

sites are near the Colorado River Substation (CRSS). Fifteen of these sites are prehistoric, two are historic transmission lines, and two are multicomponent.

Of the 287 sites and 621 isolates, the proposed construction, operation, maintenance, and decommissioning of the Project would permanently affect 195 archaeological sites and all 621 of the isolates by damaging and displacing artifacts and features. Of these, 9 sites (listed in Table 4.5-1) have been determined eligible for the NRHP or CRHR.

Avoidance of the eligible sites was recommended by SRI. Three of the prehistoric resources include trails that are related to prehistoric trade networks. SRI recommended further investigation of these sites by use of high-resolution aerial photographs and a more detailed field recording using GPS. The remaining archaeological sites were determined to be not eligible.

The Mule Tank Discontiguous Rock Art District, P-33-000504 and P-33-000773, is located outside of the Project area one mile to the southwest. The Project area may fall within the viewshed of the Mule Tank District due to the district's elevation above the Project area. However, the Project will not have an adverse effect to the Mule Tank District.

Table 4.5-1. NRHP and CRHR Eligible Sites Adversely Affected Within the Direct APE

Site Name	Site Type	Eligible under NRHP/CRHR Criteria	Proposed Effects Determinations
P-33-001821/CA-RIV-1821	Prehistoric thermal rock features with associated artifacts	Eligible, Criterion D/4, A/1, and B/2	Adverse Effect
P-33-024283/CA-RIV-11937	Prehistoric thermal rock features with associated artifacts	Eligible, Criterion D/4	Adverse Effect
P-33-024361/CA-RIV-11995	Prehistoric thermal rock features with associated artifacts	Eligible, Criterion D/4	Adverse Effect
P-33-024385/CA-RIV-12019	Prehistoric thermal rock features	Eligible, Criterion D/4	Adverse Effect
P-33-024393/CA-RIV-12027	Prehistoric thermal rock features	Eligible, Criterion D/4	Adverse Effect
P-33-024459/CA-RIV-12091	Prehistoric thermal rock features	Eligible, Criterion D/4	Adverse Effect
P-33-024394/CA-RIV-12028	Prehistoric trail	Eligible, Criterion D/4, A/1, and B/2	Adverse Effect
P-33-024496/CA-RIV-12128	Prehistoric thermal rock features with lithic scatter	Eligible, Criterion D/4	Adverse Effect
P-33-024497/CA-RIV-12129	Prehistoric thermal rock features with associated artifacts	Eligible, Criterion D/4	Adverse Effect

The Project may affect buried archaeological resources. A geoarchaeological study conducted for the Project indicated that the Orita and Rositas soil series within the Project area have a high potential for surface and buried archaeological deposits. These soil types are found in the central and northern portion of the Project. Aco and Carrizo soil series have a moderate potential for shallow subsurface deposits, and a low potential for deep subsurface deposits. The Chuckawalla

soil series has a low potential for any subsurface cultural resources. Further exploration, including test units or geoarchaeological trenching, of the sensitive Orita and Rositas soil series will be conducted. Discovery of subsurface cultural resources will be documented in accordance with the monitoring and discovery plan identified in mitigation measure CULTURAL-1.

As discussed in Section 4.17.3.1, fencing of the Project area would eliminate public access to six open routes, including three routes that provide access to the Mule Mountain ACEC. However, as discussed in Section 4.14 and shown in Figure 3.14-3, there are alternative routes to the east of the Project area. With the closure of the three routes that access the Mule Mountains, alternative access to the Mule Mountains would occur by traveling west on 22nd Avenue to Gravel Pit Road, southwest along Gravel Pit Road, and then west on an unpaved extension of 24th Avenue to BLM Routes 660863 and 661093. No additional routes would be developed.

NHPA §106 government-to-government consultation with interested Native American tribes is ongoing. Mitigation Measures CULTURAL-1 and CULTURAL-2 would serve to mitigate adverse effects to historic properties as a result of the Project. Provisions to resolve the adverse effects to historic properties will be described in a MOA and a HPTP prepared in accordance with §106.

Operation and Maintenance

The primary potential for direct impacts to cultural resources during operation and maintenance of the Project is from unanticipated damage of known or post-review discovery of archaeological sites. During operation and maintenance, the Applicant's worker training program, use of environmental monitoring, and clear demarcation of designated access roads would reduce the risk of unanticipated impacts to cultural resources within the Project APE. Avoidance and protection of resources during the operation and maintenance phase of the Project required by Mitigation Measure CULTURAL-1 would protect cultural resources originally avoided by construction impacts. Because operation and maintenance activities would be limited to the approved construction footprint of the Project, no additional direct or indirect impacts to cultural resources would be expected during operation and maintenance.

NHPA §106 and government-to-government consultation with interested Native American tribes is ongoing.

Decommissioning

The primary potential for direct impacts to cultural resources during the decommissioning phase of the Project is from unanticipated damage of known or post-review discovery of archaeological sites. The Applicant's worker training program, use of environmental monitoring, and clear demarcation of designated access roads would reduce the risk of unanticipated impacts to cultural resources within the ROW, but outside the smaller construction footprint of the Project site. Avoidance and protection of resources (Mitigation Measure CULTURAL-1) during the decommissioning phase of the Project would protect cultural resources originally avoided by construction impacts. Because decommissioning activities would be limited to the approved construction footprint of the Project, no additional direct impacts to cultural resources would be expected.

Project decommissioning would eliminate or substantially reduce indirect impacts to cultural resources by the removal of modern elements inconsistent with the historic setting of the area.

4.5.3.2 Alternative 2: Resource Avoidance Alternative

Of the 287 sites and 621 isolates, the proposed construction, operation, maintenance, and decommissioning of Alternative 2 would permanently affect 153 archaeological sites and all 621 of the isolates by damaging and displacing artifacts and features. Of these, three sites (listed in Table 4.5-2) have been determined eligible for the NRHP or CRHR, but would be avoided.

Alternative 2 would affect a total of 42 fewer archaeological sites/isolates when compared to the Proposed Action, including 6 fewer NRHP- and CRHR-eligible archaeological resources. Mitigation Measures CULTURAL-1 and CULTURAL-2 would serve to resolve adverse effects to historic properties as a result of Alternative 2.

Table 4.5-2. NRHP and CRHR Eligible Sites Adversely Affected Within the Direct APE, Alternative 2

Site Name	Site Type	Eligible under NRHP/CRHR Criteria	Proposed Effects Determinations
P-33-024361/CA-RIV-11995	Prehistoric thermal rock features with associated artifacts	Eligible, Criterion D/4	No Adverse Effect
P-33-024393/CA-RIV-12027	Prehistoric thermal rock features	Eligible, Criterion D/4	No Adverse Effect
P-33-024497/CA-RIV-12129	Prehistoric thermal rock features with associated artifacts	Eligible, Criterion D/4	No Adverse Effect

Sixteen NRHP- and CRHR-eligible sites are located outside of the Alternative 2 Project area and could be subject to indirect impacts. They may require further treatment as described in Mitigation Measure CULTURAL-2. The Mule Tank Discontiguous Rock Art District, P-33-000504 and P-33-000773, is located outside of the area of Alternative 2 one mile to the southwest. Alternative 2 may fall within the viewshed of the Mule Tank District due to the district's elevation, but will not have an adverse effect to the Mule Tank District.

4.5.3.3 Alternative 3: Reduced Project Alternative

Of the 287 sites and 621 isolates, the proposed construction, operation, maintenance, and decommissioning of Alternative 3 would permanently affect 128 archaeological sites and all 621 of the isolates by damaging and displacing artifacts and features. Of these, two sites (listed in Table 4.5-3) have been determined eligible for the NRHP or CRHR, but would be avoided.

Alternative 3 would affect a total of 67 fewer archaeological sites/isolates when compared to the Proposed Action, including 7 fewer NRHP- and CRHR-eligible archaeological resources. Mitigation Measures CULTURAL-1 and CULTURAL-2 would serve to resolve adverse effects to historic properties as a result of Alternative 3.

Table 4.5-3. NRHP and CRHR Eligible Sites Adversely Affected Within the Direct APE, Alternative 3

Site Name	Site Type	Eligible under NRHP/CRHR Criteria	Proposed Effects Determinations
P-33-024393/CA-RIV-12027	Prehistoric thermal rock features	Eligible, Criterion D/4	No Adverse Effect
P-33-024497/CA-RIV-12129	Prehistoric thermal rock features with associated artifacts	Eligible, Criterion D/4	No Adverse Effect

Seventeen NRHP- and CRHR- eligible sites are located outside of the Alternative 3 Project area and could be subject to indirect impacts. They may require further treatment as described in Mitigation Measure CULTURAL-2. The Mule Tank Discontiguous Rock Art District, P-33-000504 and P-33-000773, is located outside of the area of Alternative 3 one mile to the southwest. Alternative 3 may fall within the viewshed of the Mule Tank District due to the district's elevation, but will not have an adverse effect to the Mule Tank District.

4.5.4 Application of CEQA Significance Thresholds

CUL-1) Would the Project cause a substantial adverse change in the significance of a historical resource as defined in Code of Regulations Section 15064.5?

Under Alternatives 1, 2, or 3, no CRHR-eligible historic resources would be located within the direct APE. Therefore, impacts would be less than significant. Because of the existence of cultural resources in the APE, the potential for inadvertent discovery of historic resources is considerable and a potentially significant impact of the Project. The disturbance could not feasibly be avoided because the likelihood of undiscovered resources exists throughout the Project area; reconfiguring the Project area would not reduce the impact.

Mitigation Measures CULTURAL-1, CULTURAL-2, CULTURAL-6, and CULTURAL-7 would address these potential impacts to historic properties. CULTURAL-1 would require the development of an MOA, to include the County and Native American tribes. The MOA would include measures to avoid, minimize, and mitigate adverse effects to both NRHP and CRHR-eligible historic properties. CULTURAL-2 would require a HPTP for both NRHP- or CRHR-eligible or listed historic properties that cannot be protected from indirect effects by Project redesign. CULTURAL-6 would require that the Applicant make a good faith effort to enter into a contract with and retain monitors designated by Tribal representatives. CULTURAL-7 requires a Cultural Resources Monitoring Report that meets BLM Manual requirements and also complies with the current Riverside County Planning Department's requirements for Phase IV Cultural Resource Monitoring Reports. These measures would reduce the impacts to historical resources (including those eligible for the CRHR), if any are identified, by putting procedures in place for their management and treatment. Important resources that are not now known may be identified through ongoing tribal consultation or during construction. If the loss of these resources cannot be fully mitigated, the impacts would be significant and unmitigable under Alternatives 1, 2, or 3.

CUL-2) Would the Project cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations Section 15064.5?

Under Alternative 1, nine prehistoric sites eligible for the CRHR fall within the APE and may be directly or indirectly affected by the Project, potentially creating significant impacts. However, significant impacts are not anticipated because no unique archaeological resources have been identified to date.

Within the Alternative 2 footprints for the solar facility site and gen-tie line, 3 prehistoric sites eligible for the CRHR fall within the APE and may be indirectly affected, potentially creating significant impacts. However, significant impacts are not anticipated because direct impacts to these resources would be avoided, and no unique archaeological resources have been identified.

Within the Alternative 3 footprints for the solar facility site and gen-tie line, 2 prehistoric sites eligible for the CRHR fall within the APE and may be indirectly affected, potentially creating significant impacts. However, significant impacts are not anticipated because significant impacts are not anticipated because direct impacts to these resources would be avoided, and no unique archaeological resources have been identified.

The possibility exists that archaeological resources could be unearthed during construction of Alternative 1, Alternative 2, or Alternative 3. The potential for inadvertent discovery of archaeological resources is considerable and a potentially significant impact of Alternative 1, Alternative 2, or Alternative 3. Alternative 1, Alternative 2, or Alternative 3 would incorporate a monitoring program to discover and evaluate previously undiscovered resources found during construction (Mitigation Measure CULTURAL-4), and implementation of Mitigation Measures CULTURAL-1 through 7 would reduce some of these impacts to less than significant levels. However, because the severity of the residual impact would depend on the value of each resource found and the extent of its destruction during construction, the impact may remain significant even with all mitigation implemented. Because Alternative 3 or Alternative 3 would disturb a smaller area that Alternative 1, the potential for significant impacts would be reduced.

Significant direct physical impacts to unique archaeological resources often result in the complete destruction of the resource. Mitigation of some of these impacts involves the collection of information or "data recovery." This analysis and interpretation of the data collected through archaeology teaches us about the lives of historic people. The knowledge gained about American history enriches the lives of the general public. Therefore, although an important resource is lost forever, some of the information about that resource is retained. While mitigation measures can reduce many individual site impacts to less than significant levels, archaeological excavation and analysis cannot recover all the scientific values of a site. As a result, the impact overall may remain significant under Alternatives 1, 2, or 3.

CUL-3) Would the Project disturb any human remains, including those interred outside of formal cemeteries?

No human remains have been previously recorded or discovered during surveys of the Project site, as such, no impacts to this type of resource are anticipated; the possibility is substantial enough that the impact is considered potentially significant. Should human remains be discovered at any time during implementation of Alternatives 1, 2, or 3, construction in the vicinity would halt and the Coroner would be contacted immediately (Mitigation Measure CULTURAL-3). If the Coroner determines that the remains do not require an assessment of

cause of death and are probably Native American, then the NAHC would be contacted to identify the most likely descendants in accordance with CULTURAL-3. Implementation of this measure would reduce impacts to a less than significant level under Alternatives 1, 2, or 3.

TCR-1) Would the Project cause a substantial adverse change in the significance of a Tribal Cultural Resource that is listed or eligible for listing in the California Register of Historical Resources?

In a letter dated November 18, 2016, the Tribal Historic Preservation Office (THPO) of the Twenty-Nine Palms Band of Mission Indians described the Project as being located within the boundary of its Traditional Use Area. As discussed in Table 4.5-1, Alternative 1 would adversely impact nine archaeological sites that are eligible for the NRHP and CRHR. Based on their eligibility for the NRHP and CRHR, these sites would be considered TCRs, and these impacts would be significant. An MOA requiring consultation with the ACHP, SHPO, the Applicant, Riverside County, Native American Tribes, and other identified consulting parties would be implemented under Mitigation Measure CULTURAL-1. Through this consultation, measures to avoid, minimize, or mitigate these adverse effects would be identified and implemented. In addition, Mitigation Measure CULTURAL-6 would require that Tribes be given an opportunity to designate Tribal Observer(s) to monitor the project. Since adverse effects would be avoided, minimized, or mitigated, impacts would be reduced to less than significant.

Table 4.5-2 shows that 3 of those sites would be within the footprint of Alternative 2, and Table 4.5-3 shows that 2 of those sites would be within the footprint of Alternative 3, but that direct impacts to the sites would be avoided under Alternatives 2 and 3.

TCR-2) Would the Project cause a substantial adverse change in a resource identified through consultation with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project?

In a letter dated November 18, 2016, the THPO of the Twenty-Nine Palms Band of Mission Indians Tribe requested ongoing consultation associated with the archaeological sites determined to be eligible and possibly eligible for the NRHP and CRHR, as well as a culturally sensitive site crossed by the Project, and a culturally sensitive area in the vicinity of the Project. In a letter dated May 16, 2018, the Tribe described the culturally sensitive site and the culturally sensitive area as TCRs that have a cultural value to the Tribe.

As described for TCR-1, Alternative 1 would adversely impact nine archaeological sites that are eligible for the NRHP and CRHR, and for which the Tribe has requested ongoing consultation. An MOA requiring consultation with the ACHP, SHPO, the Applicant, Riverside County, Native American Tribes, and other identified consulting parties would be implemented under Mitigation Measure CULTURAL-1. Through this consultation, measures to avoid, minimize, or mitigate these adverse effects would be identified and implemented. In addition, Mitigation Measure CULTURAL-6 would require that Tribes be given an opportunity to designate Tribal Observer(s) to monitor the project. Since adverse effects would be avoided, minimized, or mitigated, impacts would be reduced to less than significant. Impacts to these sites would be avoided under Alternatives 2 and 3.

In a letter dated May 16, 2018, the Tribe described the culturally sensitive site and the culturally sensitive area as TCRs that have a cultural value to the Tribe. As discussed in Section 4.5.3.1, the Mule Tank Discontiguous Rock Art District, P-33-000504 and P-33-000773, is located outside of the Project area one mile to the southwest. The Project area may fall within the viewshed of the Mule Tank District due to the district's elevation above the Project area. However, neither Alternatives 1, 2, or 3 would have an adverse effect to the Mule Tank District. There would be no impacts.

4.5.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.5 would be maintained. No ground disturbance would occur, and no historic properties would be affected. Therefore Alternative 4 would not result in any impacts associated with cultural resources.

4.5.6 Cumulative Impacts

The regulations implementing §106 of the NHPA contemplate close coordination between the NEPA and NHPA processes (40 CFR §1502.25(a); 36 CFR §800.8(a)) and both require an examination of cumulative impacts. 36 CFR §800.5(a)(1) defines an undertaking's "adverse effect" to include "reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative".

For purposes of this cumulative analysis, impacts on cultural resources could occur at any time throughout the life of the Project. The past, present, and reasonably foreseeable projects considered to be the cumulative scenario for this Project are shown in Tables 4.1-1 and 4.1-2. These are primarily large-scale renewable energy projects that require extensive grading and ground disturbance. The cumulative projects also include several transmission lines and non-renewable energy projects, as well as residential and commercial developments along the I-10 corridor. Ground disturbance and construction associated with these types of projects would be on a smaller scale than the renewable energy projects, given the smaller acreage generally involved with these projects.

The area for analysis of cumulative impacts is often more extensive and far-reaching than just the APE. Impacts to cultural resources can include archaeological sites, traditional use areas, and cultural landscapes located along the I-10. Numerous significant archaeological and historical resources have been previously discovered within the Project's broader geographical area, although many are not thoroughly documented. Therefore, the Project and the alternatives have the potential to inadvertently discover, unearth, expose, disturb, or cause damage archaeological, historic, and Native American resources.

Information has been gathered by previous studies regarding various projects' impacts on previously known or unknown cultural resources within the region. The cumulative impacts of seven past projects (the Blythe Energy II Project, Genesis Solar Energy Project, Desert Sunlight

Solar, Eagle Mountain Pumped Storage Project, MSEP, Quartzsite Solar Energy Project in Arizona, and Desert Harvest Project) are summarized below (summarized from BLM 2014). The Blythe Energy II Project altered ten historic resources (CEC and WAPA 2005). Twelve prehistoric sites and 15 historic archeological sites were identified by Final EIS for the Genesis Solar Energy Project that would be impacted by the project (BLM 2010). The Desert Sunlight Solar Project estimated that 49 historic sites, six prehistoric sites, one multicomponent site, and one site of an unknown date would be damaged, as well as an indirect effect on one built environment resource, two archaeological districts, and one prehistoric site (BLM 2011). One built environment resource and seven historic sites were altered by the Eagle Mountain Pumped Storage Project (SWRCB 2010). The Final EIS for the MSEP listed 101 archaeological sites that would be impacted by the project (BLM 2012b). The Quartzsite Solar Energy Project, located in Arizona, concluded that it would alter three historic sites and one prehistoric site as well. Seven important tribal resources were also identified that the project would both directly and indirectly affect (WAPA 2011). Lastly, the Desert Harvest project stated that one prehistoric site would be impacted, while one historic landscape would have indirect effects from the project (BLM 2012f). The Modified BSPP EIS identified 99 archaeological sites, including 84 which remained unevaluated, and which could be impacted by that project (BLM 2014). It is worth noting that while these projects have all been approved for development, several have not been constructed years after their approval, including the Rice Solar Energy Project and Desert Harvest.

The majority of cultural resources currently identified in the course of past and present projects within the region are archaeological sites, most of which date from the historic period (BLM 2014). Prehistoric sites within the Project area consist of hearth features, trails, campsites, habitation sites, lithic scatters, and ceramic scatters. Historic archaeological sites within the Project vicinity include roads, wells, agricultural fields, refuse scatters, camps, and features associated with mining, transportation, agriculture, and military training. Many of these historic sites are related to the DTC-C/AMA. Answers to regional research questions can be learned from studying these prehistoric and historic sites. Damage to archaeological sites cannot be reversed and information may be lost. Cumulative effects may alter the setting, feeling, and association of archaeological resources within the wider geographic area.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

The proposed construction, operation, maintenance, and decommissioning of the Project would permanently affect 195 archaeological sites and 621 isolates by damaging and displacing artifacts and features. The Project would directly affect 9 archaeological resources that have been determined eligible for the NRHP and CRHR. None of these 9 resources are associated with the DTC-C/AMA, a NRHP-eligible historic district. An MOA would be developed pursuant to §106 of the NHPA for the Project and would include provisions to resolve the adverse effects to these archaeological sites.

Most of the cumulative projects are on BLM or other Federal land and, for this reason, are or would be subject to NEPA and the NHPA, which contain cultural resource protective requirements related to investigations, impact assessment, avoidance, and mitigation. The cumulative projects that would not be located on Federal land would require discretionary state or local agency approvals, and so would be subject to CEQA; therefore, any related impacts on

cultural resources would be subject to cultural resource-protective requirements based on state law to avoid or minimize these impacts. Cumulative impacts would vary by alternative only to the degree to which direct and indirect impacts would vary by alternative.

The Project would not cause a substantial adverse change in the significance of a historical or archaeological resource (impact CUL-1 and CUL-2). With implementation of Mitigation Measures CULTURAL-1 through 7, the Project's contribution to impacts would not be cumulatively considerable.

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

This alternative would result in a reduction of the number of sites impacted, as well as reduce the acreage and footprint of the overall Project. This will provide for fewer cumulative impacts over time. Alternative 2 would affect a total of 42 fewer archaeological sites/isolates when compared to the Proposed Action (Alternative 1). Due to the smaller Project area and planned avoidance of NRHP- and CRHR-eligible resources, the cumulative impacts for Alternative 2 are also reduced.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

This alternative would result in further reductions of the number of sites impacted, as well as reduce the acreage and footprint of the overall Project. This will provide for fewer cumulative impacts over time. Alternative 3 would affect a total of 67 fewer archaeological sites/isolates when compared to the Proposed Action (Alternative 1). It would also affect a total of 25 fewer archaeological sites/isolates when compared to Alternative 2. Due to the smaller Project area and planned avoidance of NRHP- and CRHR-eligible resources, the cumulative impacts for Alternative 3 are also reduced.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. There would be no potential to impact cultural resources, and therefore no contribution to cumulative cultural resource impacts.

4.5.7 Residual Impacts

Implementation of Mitigation Measures CULTURAL-1 and CULTURAL-2 would reduce but may not fully avoid Project- related impacts on cultural resources. Cultural resources damaged or destroyed by construction activities, even if subjected to mitigation measures, would be permanently lost from the archaeological record. These cultural resources therefore would be unavailable for future study to address future research needs when more advanced investigative techniques and methods of analysis might be available. Unavoidable adverse effects on cultural resources would result from construction, operation, maintenance, and decommissioning of all of the Project components under Alternative 1. Consultations may raise issues that cannot be

resolved through the implementation of mitigation measures. Prescribed treatments may resolve adverse effects under NHPA §106. However, given the scale and potential significance of the resources identified, impacts may remain significant under NEPA despite implementation of the MOA. Because all impacts under CEQA would be less than significant, residual impacts would also be less than significant.

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4.6 Environmental Justice

4.6.1 Methodology for Analysis

To carry out the policy set forth in NEPA, the Federal government has a "… continuing responsibility … to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may … achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities" (42 USC §4331(b)(5)).

This analysis of potential effects of the Proposed Action and alternatives on environmental justice issues reflects this mandate as well as that contained in Executive Order No. 12898, which requires a Proposed Action's impacts on environmental justice to be considered as part of the NEPA process if the Proposed Action would "result in impacts that are appreciably more severe in magnitude or are predominately borne by any segment of the population, for example, household population with low income or a minority population in comparison with a population that is not low income or minority." The Presidential memorandum accompanying the executive order states that "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by NEPA."

To consider environmental justice issues in the context of the Project, this analysis uses a demographic screening evaluation to determine whether a minority and/or low-income population exists within a six mile radius beyond the site boundary, which is considered the furthest extent of potential impacts to human health and safety. Broader social and economic impacts are considered for the populated areas of the City of Blythe, the Colorado River Indian Reservation, and the unincorporated community of Mesa Verde. These areas are included in U.S. Census tracts 459, 461.01, 461.02, 461.03, 462, 469, 9810, Blythe City, Blythe CCD, Chuckwalla CCD, and the Colorado River Indian Reservation. These areas contain many of the communities with the potential to be most affected by socioeconomic impacts.

The demographic screening to determine the presence of minority and low-income populations is based on information contained in two documents: *Environmental Justice: Guidance Under the National Environmental Policy Act* (CEQ 1997) and *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (USEPA 1998). The screening process relies on 2009-2013 American Community Survey data to determine the presence of minority and below- poverty-level populations. In addition to the demographic screening analysis, this document follows the steps recommended by the USEPA's guidance documents, which recommend outreach and involvement, and, if warranted, a detailed examination of the distribution of impacts on segments of the population.

The USEPA guidance (USEPA 1998) provides a numerical threshold, 50 percent of the total population, to identify an affected community of minority population for analysis of environmental justice. The guidance also states that the percentage of minority population in the affected area should be "meaningfully greater" than that in the general population to which the affected population is compared.

Although the guidance does not provide a numerical threshold for "meaningfully greater," for this analysis, the percentage of minority population is considered to be meaningfully greater than that of the general population if the percentage of minority population in the affected area is simply greater than that of the general population, providing for a conservative analysis. For this analysis, because minority populations are nearly all over 50 percent, including for Riverside County, all geographies can be considered areas of environmental justice concern.

The USEPA guidance does not provide a numerical threshold for identifying a low-income population. It recommends use of Census data on poverty income as one indicator and other local data as may be available. This analysis uses the percentage of affected population who either as individuals or as members of families having incomes below the Census-defined poverty threshold.

The percentage is compared to that of the general population, and the affected area is included in the analysis if the percentage of low-income population is meaningfully greater than that of the general population, based on the same thresholds as in the case of a minority population.

In addition, the USEPA guidance states that the analysis of environmental justice should determine if the affected area of minority population and/or low-income population is subject to "disproportionately high and adverse human health or environmental effects" from the Project. The guidance suggests that a comparative analysis be performed on potential Project impacts to the affected population and a reference population to determine the type of high and adverse effects and the extent of disproportionality (USEPA 1998).

The primary affected area was considered to be six miles around the boundary of the Project site and the transmission corridor, including agricultural lands on northwestern Palo Verde Mesa, portions of the City of Blythe and its sphere of influence, Blythe Airport, and unincorporated community of Mesa Verde, located south of Blythe Airport and I-10. In addition, the analysis included a secondary area, which encompassed the populated areas of the City of Blythe and the Colorado River Indian Reservation. These areas are included in U.S. Census tracts 459, 461.01, 461.02, 461.03, 462, 469, 9810, Blythe City, Blythe CCD, Chuckwalla CCD, and the Colorado River Indian Reservation. As discussed in Section 3.6.1.1, the Chuckwalla Valley CCD, in which the Project is located, has a minority population of 76.7 percent of the population. This percentage is higher than Riverside County as a whole (61.7 percent) and the Blythe CCD (68.5 percent), but is similar to the percentage for the City of Blythe (71.9 percent). Only one of the areas, CT470, had a minority population lower than 50 percent of the total population. All of the areas, with the exception of CT470, are therefore of potential concern for environmental justice analysis.

With respect to income, the percentages of household population living with income below the poverty threshold for those areas within a six mile radius of the Project site, and within the secondary areas of La Paz County and Colorado River Indian Reservation, is shown in Table 3.6-1. The percentage of Riverside County population with income below the poverty level is 16.9 percent. Accordingly, the percentage of population below the poverty level in an affected area is considered to be meaningfully greater than the general population if it exceeds 16.9 percent, providing for a conservative analysis. The Chuckwalla Valley CCD, in which the Project is located, has 19.2 percent of the population with income below the poverty level. This percentage is higher than Riverside County as a whole (16.9 percent). All areas included in the analysis had a greater percentage of the population with income below the poverty level than

Riverside County as a whole, and are therefore of potential concern for environmental justice analysis..

The findings and analysis contained in the following sections of this Draft PA/EIS/EIR have been reviewed as part of this analysis of environmental justice issues: 4.2, *Air Resources*; 4.7, *Geology and Soils*; 4.9, *Hazards and Hazardous Materials*; 4.12, *Noise*; 4.14, *Recreation and Public Access*; 4.15, *Social and Economic Effects*; 4.17, *Transportation and Traffic*; 4.19, *Visual Resources*; and 4.20, *Water Resources*. Other sections (such as cultural resources, mineral resources, and lands and realty) were determined to have no potential health, environmental, or social effects on the local populations and, therefore, were not reviewed further for potential environmental justice impacts. In reviewing each of these sections, this environmental justice analysis considers potential impacts and mitigation measures and whether a "disproportionately high and adverse" (CEQ 1997) impact would result for the area within six miles of the proposed Project site, or to the secondary area which includes the Colorado River Indian Reservation.

4.6.1.1 CEQA Significance Criteria

CEQA does not require the analysis of environmental justice impacts and so does not provide specific significance criteria for environmental justice impacts. Consequently, no CEQA significance determinations have been made for the analysis of environment justice impacts below.

4.6.2 Applicant-Proposed Measures

There are no APMs to address potential effects of environmental justice.

4.6.3 Direct and Indirect Impacts

4.6.3.1 Alternative 1: Proposed Action

The closest residents are an apparent occupied mobile home trailer located approximately 3,700 feet north of the northeast corner of the Project boundary, and a residence located approximately 4,800 feet north of the northeast corner of the Project site boundary. The analysis of noise impacts, and impacts associated with geologic hazards and soils, hazards and hazardous materials, and transmission line safety and nuisance, concluded that impacts would be limited to a small area surrounding the Project site, and would not affect the communities of concern. As these impacts cannot affect any population, they are unable to accrue disproportionately to nearby environmental justice populations.

The potential for adverse impacts to human health and the environment through other resource areas to result in disproportionately high and adverse impacts on nearby residents is described below.

Construction, Operation and Maintenance, and Decommissioning

Project construction, operations, and decommissioning may result in potential impacts on the communities of concern for the following issues:

Air Quality

The analysis of air quality impacts in Section 4.2 indicates that, even with APMs and Mitigation Measures AQ-1 and AQ-2, emissions for NO_x, PM_{10}, and $PM_{2.5}$ during Project construction would exceed the MDAQMD daily and annual thresholds. Although there are two receptors located within one mile of the Project boundary, emissions sources would be dispersed throughout the Project area and the access road, and there would be no substantial point source emissions. These impacts are not expected to be disproportionately high and adverse for the community of concern because they would be temporary during construction, and would cease following completion of construction, and are unlikely to affect the closest sensitive receptor, which is located approximately 3,700 feet from the Project area.

Recreation

Six existing roadway routes on the Project site would be closed for the duration of the Project, reducing access for recreational activities. Three of these routes provide access to the private land parcel at the center of the Project area, which will be inaccessible to the public, so are not likely to be used for recreation. Three other routes provide access to the Mule Mountains. However, other nearby routes that provide similar access to these mountains would remain open. With the closure of the three routes that access the Mule Mountains, alternative access to the Mule Mountains would occur by traveling west on 22nd Avenue to Gravel Pit Road, southwest along Gravel Pit Road, and then west on an unpaved extension of 24th Avenue to BLM Routes 660863 and 661093. With access open to the Mule Mountains ACEC, the Project would be unlikely to adversely affect recreation access or reduce recreational opportunities. The area within the solar plant site boundary would be inaccessible for recreational use. However, these impacts would not be disproportionately high and adverse for the community of concern because alternative recreational sites are equally accessible and available to nearby residents.

Social and Economic Issues

Expenditures related to Project construction, operation, and maintenance are expected to result in beneficial economic impacts to the surrounding region. The need for temporary housing for construction workers may increase demand for vacant housing and for transient facilities (hotels, motels, and camping sites). The need for housing for permanent employees who may relocate to the Blythe area would increase the demand for housing to be purchased or rented. Such demand would result in positive impacts to owners of vacant and transient housing, but may result in negative impacts to those seeking to relocate into the surrounding areas by limiting the availability of remaining housing options. This is not considered to be a disproportionately high impact to the community of concern, because substantial temporary and long-term housing exists in the region to accommodate construction and operations personnel, and socioeconomic impacts are not considered to be adverse.

Transportation and Traffic

Construction-related traffic, both from commuting workers and transport of materials, would temporarily increase traffic levels on I-10, Mesa Drive, and the 16th Avenue/Seeley Avenue access road to the Project site. Operation and maintenance would result in a minor increase in traffic; however, no Project-related traffic increases would reduce the level of service (LOS) of I-10 in this area or cause traffic levels that would exceed the capacity of local roadways.

Therefore, these impacts would not be disproportionately high or adverse for nearby environmental justice populations.

Visual Resources

The Project would result in short-term impacts from construction lighting and visible dust plumes, and adverse effects from large-scale visual disturbance in the landscape resulting from construction activities and equipment. During operation and maintenance, the Project would likely be a source of adverse visual impact as a large-scale visual disturbance that would introduce industrial components and facilities to the landscape. Due to the Project site's distance from populated areas and its corresponding overall small part of the visual landscape from these locations, this impact is not considered to accrue disproportionately to nearby environmental justice populations, and is not considered an environmental justice impact.

Water Resources

As discussed in Section 4.20.3.1, groundwater modeling shows that the drawdown impacts from water use are negligible to offsite water wells. Therefore, the Project would not result in groundwater supply impacts from the use of groundwater for Project construction, operations, or decommissioning.

As shown in Figure 3.6-1, the Project is located in an area with minority and low income populations. Water supply for these local residents, the nearest being located approximately 3700 feet north of the proposed solar facility, is most likely from groundwater. Hazardous materials would be used as part of Project construction and operations and could, if released, contaminate groundwater. Mitigation Measure WATER-1 would require that vehicle fueling occur only in a designated area protected by secondary containment, limiting the potential for release of fuels. In addition, Mitigation Measure HAZ-1 requires the Applicant to cap onsite wells, establish baseline groundwater quality, and periodically sample groundwater and the septic system to verify that no releases have occurred. If a release were to occur, its extent would be limited because of the relatively low volumes of hazardous materials and fuels onsite at any time. A release to groundwater would also flow to the east, which is the dominant groundwater flow direction, and not towards the nearest residences to the north. Although releases to groundwater could occur, it is unlikely that these would accrue to any nearby environmental justice population.

4.6.3.2 Alternative 2: Resource Avoidance Alternative

With respect to the resource areas of air quality, recreation, social and economic issues, transportation and traffic, visual resources, and water resources, the analysis in their respective subsections in Chapter 4 concluded that impacts associated with Alternative 2 were similar to, or slightly lower than, the impacts associated with the Proposed Action. Because the Proposed Action was not expected to cause disproportionately high or adverse impacts on minority and/or low-income populations through impacts to these resource areas, there would be no high or adverse impacts on minority and/or low-income populations associated with Alternative 2.

4.6.3.3 Alternative 3: Reduced Project Alternative

With respect to the resource areas of air quality, recreation, social and economic issues, transportation and traffic, visual resources, and water resources, the analysis in their respective subsections in Chapter 4 concluded that impacts associated with Alternative 3 were similar to, or slightly lower than, the impacts associated with both the Proposed Action and Alternative 2. Because the Proposed Action and Alternative 2 were not expected to cause disproportionately high or adverse impacts on minority and/or low-income populations through impacts to these resource areas, there would similarly be no high or adverse impacts on minority and/or low-income populations associated with Alternative 3.

4.6.4 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.6 would be maintained. With respect to the resource areas of air quality, recreation, social and economic issues, transportation and traffic, visual resources, and water resources, there would be no adverse impacts which would cause disproportionately high or adverse impacts on minority and/or low-income populations.

4.6.5 Cumulative Impacts

The Project would have no impact related to environmental justice; therefore, it would not cause or contribute to any cumulative impact in this regard.

4.6.6 Residual Impacts

In Sections 4.6.3.1, 4.6.3.2, and 4.6.3.3, no resource impacts which could potentially result in disproportionately high or adverse impacts on minority and/or low-income populations were identified for any of the action alternatives. Therefore, there would be no residual impacts.

4.7 Geology and Soils

4.7.1 Methodology for Analysis

The analysis of the Proposed Action and alternatives is based on a qualitative assessment of their effects on soil resources, their susceptibility to geologic and seismic hazards, and their potential to cause or exacerbate geologic and seismic hazards. The analysis is based upon existing publications and maps completed by state and Federal agencies, such as the U.S. Geological Survey (USGS), California Geological Survey (CGS), U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), and the California Division of Mines and Geology (CDMG). In addition, the severity and significance of geology and soils impacts are analyzed in the context of existing regulations and policies aimed at abating potential impacts to soil resources and from geologic and seismic hazards.

The information in the existing publications and maps was reviewed and summarized by the Applicant in their Preliminary Geotechnical Investigation Report for the First Solar Development, Inc., Desert Quartzite Solar Project, Riverside County, California, prepared by URS, 2011. That report concluded that a comprehensive design-level geotechnical investigation should be performed prior to construction. In their POD, the Applicant committed to conducting geotechnical field investigations, and incorporating the results into the Project design. The field investigations would include exploratory borings to evaluate subsurface conditions. While the scope, findings, and recommendations of that field investigation are forthcoming, this analysis assumes that the geotechnical report would be consistent with the current state of practice in the field of engineering geology, and would provide the information necessary to design the Project in accordance with the 2007 California Building Code (CBC). In addition, construction would be overseen by a licensed geotechnical engineer, who would observe and test engineered fill, subgrade preparation, foundation-bearing soils, and other geotechnical conditions exposed during construction.

The following issues were considered in the analysis of impacts related to geology and soils for the Proposed Action and each alternative:

1. Accelerated and/or environmentally harmful soil erosion;
2. Damage to Project elements or increased exposure of the public to risks from rupture of a known earthquake fault;
3. Injury, death, or property damage as a result of earthquake induced ground deformations (e.g. lateral spreading, subsidence, liquefaction, or collapse), or otherwise unstable soils; and
4. Injury, death, or property damage as a result of an on-site or off-site landslide.

4.7.1.1 CEQA Significance Criteria

The criteria used to determine the significance of potential geology and soils impacts are based on Appendix G of the state CEQA Guidelines. The Project would result in a significant impact under CEQA related to geology and soils if it would:

GEO-1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving:

a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.

b) Strong Seismic ground shaking.

c) Seismic-related ground failure, including liquefaction.

d) Landslides.

GEO-2) Result in substantial soil erosion or the loss of topsoil.

GEO-3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

GEO-4) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life and property.

GEO-5) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

The following additional significance criteria from the County of Riverside CEQA Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

GEO-6) Be subject to geologic hazards, such as seiche, mudflow, or volcanic hazard.

GEO-7) Change topography or ground surface relief features.

GEO-8) Create cut or fill slopes greater than 2:1 or higher than 10 feet.

GEO-9) Result in grading that affects or negates subsurface sewage disposal systems.

GEO-10) Change deposition, siltation, or erosion that may modify the channel of a river or stream or the bed of a lake.

GEO-11) Result in any increase in water erosion either on- or off-site.

GEO-12) Be impacted by or result in an increase in wind erosion and blowsand, either on- or off-site.

GEO-13) Be an incompatible land use located adjacent to a state classified or designated area or existing surface mine.

GEO-14) Expose people or property to hazards from proposed, existing or abandoned quarries or mines.

4.7.2 Applicant-Proposed Measures

There are no APMs proposed to address potential adverse impacts due to geologic hazards, or impacts to soil resources.

4.7.3 Direct and Indirect Impacts

4.7.3.1 Alternative 1: Proposed Action

Site conditions related to soil resources and potential geologic hazards are discussed in Section 3.7. Geologic and seismic hazards could affect the Project during construction, operations, and decommissioning phases, during which built structures could be exposed to adverse or unfavorable conditions related to soils and/or geology, or to the effects of a seismic event. Following the decommissioning phase, all Project facilities would be removed, precluding impacts related to geology, soils, and/or seismicity. During the construction and decommissioning phases, soil disturbance would occur that could result in the potential to contribute to erosion impacts.

Construction, Operation and Maintenance, and Decommissioning

Surface Fault Rupture

As discussed in Section 3.7, there are no active or potentially active faults mapped within the Project site (CGS 2010). The closest active faults are more than 58 miles away. Therefore, the potential for surface fault rupture within the Project site is low.

Ground Shaking

As discussed in Section 3.7, the Project site is located over 58 miles from the closest active faults in the region. Relative to the more seismically active areas to the west and northwest, the Project site will experience lower levels of shaking less frequently (CGS 2008). The estimated site intensity is a Modified Mercalli Intensity (MMI) value of V, which corresponds to a moderate shaking severity. Such an earthquake would be strong enough to be felt by nearly everyone, and would likely break windows and overturn unstable objects. There is a 10 percent chance that the Project area could experience a peak ground acceleration (PGA) value of 0.0373g or greater over the next 50 years. A PGA of 0.0373g could result in slight damage to older structures and would not likely result in damage to newer structures built according to current design standards. Relative to many areas in California, the Project site is distant from known, active faults and experiences less frequent and lower levels of shaking.

The highest severity of ground-shaking at the site that can be reasonably anticipated would be moderate, and building and foundation designs would be consistent with the CBC, which requires that engineers design structures to withstand earthquake loads as well as other loads (such as wind). As discussed in Chapter 2, *Proposed Action and Alternatives*, the Applicant's pre-construction geotechnical field investigations would be used to evaluate and, if necessary, modify the proposed Project design for buildings and PV mountings. In order to ensure that this proper geotechnical information is developed, Mitigation Measure GEO-1 would require the Applicant's site-specific geotechnical report to determine the physical and chemical characteristics of the site's soils, ground response to earthquakes, as well as the appropriate seismic design parameters necessary to develop adequate engineering designs and construction plans for the Project. Mitigation Measure GEO-1 would ensure compliance with the 2013 CBC, and would be sufficient to minimize risks associated with ground-shaking.

Based on the site's distance from active faults and the low likelihood of strong seismic ground shaking at the site, in addition to the design and construction standards imposed by the 2013

CBC, the impact of strong seismic ground shaking would be minor and no additional mitigation is required.

Liquefaction

As discussed in Section 3.7, the depth to groundwater of approximately 100 feet suggests that the Project site is unlikely to have saturated soils which could be susceptible to liquefaction.

Settlement

As discussed in Section 3.7, the site is underlain by alluvial fan deposits of relatively unconsolidated, medium-dense materials. These may be unstable to support structures in the vicinity of the operations and maintenance facility and the On-Site Substation, and could be susceptible to settlement. As discussed in Chapter 2, *Proposed Action and Alternatives*, the Applicant's pre-construction geotechnical field investigations would be used to evaluate the potential for settlement and, if necessary, modify the proposed Project design for buildings and PV mountings. In order to ensure that the proper geotechnical information is developed, Mitigation Measure GEO-1 would require the Applicant's site-specific geotechnical report to determine the potential for settlement, as well as the appropriate seismic design parameters necessary to develop adequate engineering designs and construction plans for the Project. Mitigation Measure GEO-1 would ensure compliance with the 2013 CBC, and would be sufficient to minimize risks associated with settlement.

Landslides

As discussed in Section 3.7, the potential for landslides, slope instability, or debris flows at the Project site is insignificant, due to the relatively flat terrain.

Subsidence

As discussed in Section 3.7, no subsidence has been reported in the Project area. There is no petroleum or natural gas withdrawal which could result in subsidence. The EIS prepared for the BSPP concluded that no regional subsidence due to the historic groundwater withdrawal has been reported in the vicinity (BLM 2010). This includes localized or regional subsidence during the 1980's and 1990's, when regional groundwater extraction was at its historic maximum of approximately 48,000 AFY in the general area (BLM 2010). Therefore, no subsidence associated with the groundwater production for the Project is expected.

Because the Project site is associated with alluvial fans, the potential for hydrocompaction of collapsible soils could exist. Hydrocompaction of site soils would not present a life or safety hazard to site workers or the public, but may cause damage to proposed facilities if hydrocompaction-related effects are not anticipated or considered in site preparation and foundation designs for the Project. Soils that experience hydrocompaction are more typically a problem for underground linear infrastructure such as pipelines and cables, or flat, rigid foundations where greater surface areas are in contact with collapsible soils, such as might be the case with building foundations and concrete equipment and tower pads. Steel posts for the solar trackers and gen-tie line monopoles that are directly driven into borings are less likely to be adversely affected by hydrocompaction. The potential adverse effects of hydrocompaction of site soils during the construction and operations phases of the Project would be adequately addressed

through the compaction and grading requirements of the 2013 CBC, and by more stringent or specific recommendations provided by the Applicant's Project-specific geotechnical report described in Mitigation Measure GEO-1. Typical building practices might include moisture conditioning of the soil to achieve maximum stability, ensuring deleterious materials are removed from soil prior to being placed or moved on-site, and/or over-excavating existing soils and placing structural foundations on a mat of artificial fill compacted to appropriate design specifications. These types of measures, which are standard in the engineering practice and required through building and construction codes, ensure that small ground movements such as long-term soil consolidation or movements due to subsidence or collapsible soils do not damage or deteriorate building foundations and/or other structural components of the Project.

Expansive Soils

As discussed in Section 3.7, the soils on the Project site are not expected to have expansive characteristics (USDA 1969). The geotechnical study to be completed by the Applicant, as described in Mitigation Measure GEO-1, would include site-specific investigation to verify this conclusion. The study would provide site-specific Project design and construction recommendations, if needed, to address any expansive soils identified during the Applicant's field geotechnical investigations. Expansive soils, if present, would be adequately addressed through standard engineering and construction practices and implementation of geotechnical recommendations, if applicable.

Corrosive Soils

As discussed in Section 3.7, all soil types mapped on the site have a low potential for corrosion of concrete, but may have a high risk for corrosion of uncoated steel (USDA 1969). Long-term corrosion can cause damage to buried structures such as foundations and subgrade utilities, and if left unaddressed, can cause serious impairments to the structure's function and ability to withstand design loads. Adequate site preparation, which includes foundation placement of a mat of engineered fill, is likely to reduce the risk of corrosion for many of the proposed structures. The effects of corrosive soils would be further mitigated, if necessary, by incorporating any corrosion protection recommendations provided in the geotechnical report, as described in Mitigation Measure GEO-1.

Erosion

Figure 3.7-3 showed the distribution of Hydrologic Soil Groups in the Project area, and the acreage of each alternative with respect to Hydrologic Soil Groups is shown in Table 4.7-1. As shown in Figure 3.7-3, most of the Project area is dominated by Hydrologic Soil Group A soils, which have a high infiltration rate and are not expected to be prone to erosion by surface water runoff. There are Group C soils present in the western and northern portions of the site, but these areas mostly lie outside of the footprint of the evaluated alternatives, including Alternative 1. Also, these Group C soils coincide with flat stormwater ponding areas on the site. Although the soils may not facilitate infiltration, the fact that these areas are flat results in a low potential for stormwater erosion.

Table 4.7-1. Comparison of Project Footprint to Hydrologic Soil Groups

Hydrologic Soil Group by Project Component	Impact within Project Area (acres)			
	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action
Solar Plant Site				
Group A – High Infiltration Rate	2,522	2,138	1,567	0
Group B – Moderate Infiltration Rate	665	467	399	0
Group C – Low Infiltration Rate	351	104	123	0
Gen-Tie Line				
Group A – High Infiltration Rate	19	34	34	0
Group B – Moderate Infiltration Rate	0	0	0	0
Group C – Low Infiltration Rate	0	0	0	0

The geotechnical study to be completed by the Applicant, as described in Mitigation Measure GEO-1, would include site-specific investigation to verify this conclusion. Project activities which uncover and expose soils, including vegetation removal, site grading, excavation, and soil stockpiling, would leave loose soil exposed to the erosive forces of rainfall, stormwater run-on, and high winds. Further, the operation of heavy machinery and vehicles over access roads, staging areas, and construction work areas is likely to compact desert soils and decrease their capacity to infiltrate stormwater, resulting in greater levels of surface runoff in response to rainfall than might otherwise occur under natural conditions. The installation of proposed facilities, including roads, fencing, and solar arrays, could result in erosion and soil loss if not properly mitigated.

As discussed in Chapter 2, the Applicant has proposed several construction methods to minimize the potential for erosion during construction. Through Mitigation Measure WATER-1, the Applicant would be required to develop and implement a construction SWPPP, which would describe BMPs to be used for stormwater management and erosion control. The Applicant would use site preparation and stormwater control techniques to protect the facility from potential flood damage, avoid modifying upstream or downstream drainage flow rates, and avoid the potential for stormwater pollution through erosion. These techniques would be designed to encourage sheet flow across the Project site. The preferred method for site preparation would be to compact existing vegetation and disk it into the soil, leaving root systems in place. Cut and fill would be used in limited areas to fill depressions to stop water from pooling, and in limited areas where mounding occurs. Any necessary cut-and-fill site preparation would be timed to minimize the length of time that uncovered ground is left exposed, thereby minimizing wind and water erosion in those areas. In addition to site preparation, the Applicant would use silt fence, fiber rolls, and other erosion control methods at locations which may be subjected to erosion. Heavily used

areas, such as the construction entrance, concrete wash-out area, and trackout pad areas would be stabilized with gravel, filter fabric, and straw bales.

As part of the analysis of impacts to soil resources for the BSPP, located north of the Project site, an analysis of soil loss under existing conditions, the construction phase, and the O&M phase of the Project for each of the three soil series mapped on the Project site was conducted (BLM 2010). One of these three soil series was the Rositas-Orita-Carrizo-Aco series, which are the predominant soils present at the DQSP site, and the analysis of the BSPP is relevant in informing the change in erosion rates that may be caused by the Project during both the construction and operation and maintenance phases.

The potential for soil loss by water erosion (sheet and rill erosion) on the BSPP site also estimated using the Universal Soil Loss Equation for pre-development, during construction, and operational conditions (BLM 2010). Modeling shows soil erosion rates on the Rositas-Orita-Carrizo-Aco series type soils would increase during construction, from 0.23 tons/acre/year to 0.51 tons/acre/year, but would be the same as the undisturbed state during operations. Without protective measures, soil disturbance and compaction, which could occur wherever soil moving activities and access roads are proposed, could cause a noticeable and possibly substantial increase in water erosion rates during low frequency, high intensity rainfall events.

The potential adverse effect of water issues is comprehensively addressed in Section 4.20. While the discussion in Section 4.20 is primarily concerned with changes in hydrology and adverse water quality impacts, the potential for surface water runoff to entrain soils and sediment is a primary concern from a water quality perspective. Consequently, the analysis provided in Section 4.20 is equally applicable to the issue of erosion and soil loss, and the mitigation proposed is likewise equally effective at reducing potential impacts. Mitigation Measure WATER-1 would reduce or avoid potential impacts with respect to construction and decommissioning activities, whereas Mitigation Measure WATER-2 would reduce the Project's effect on long-term erosion rates.

Figure 3.7-4 showed the distribution of Wind Erodibility Groups in the Project area, and the acreage of each alternative with respect to the Wind Erodibility Groups is shown in Table 4.7-1. As shown in Figure 3.7-4, the areas of highest potential wind erodibility (160 to 310 tons per acre per year) correspond to the sand dune areas in the northern and western parts of the Project area. The bulk of the Project area is classified as having moderate wind erodibility potential, in the range of 86 to 134 tons per acre per year. Alternative 1 overlies portions of the area with highest wind erosion potential in the southwestern part of the Project area, but mostly avoids the northern area.

Table 4.7-2. Comparison of Project Footprint to Soil Wind Erodibility Groups

Soil Wind Erodibility Group by Project Component	Impact within Project Area (acres)			
	Alternative 1 Proposed Action	Alternative 2 Resource Avoidance Alternative	Alternative 3 Reduced Project Alternative	Alternative 4 No Action
Solar Plant Site				
38 tons per acre per year	0	0	0	0
86 tons per acre per year	1,987	1,595	1,282	0
134tons per acre per year	1,121	958	683	0
160 to 310 tons per acre per year	430	157	123	0
Gen-Tie Line				
38 tons per acre per year	0	0	0	0
86 tons per acre per year	3	14	14	0
134tons per acre per year	5	6	6	0
160 to 310 tons per acre per year	11	14	14	0

The potential for soil loss by wind erosion on the BSPP site was also estimated using the Wind Erosion Prediction System (WEPS) for pre-development (undisturbed), during construction, and operational conditions. The wind erosion values calculated for the site indicate that, during construction, wind erosion of the Rositas-Orita-Carrizo-Aco series type soils would exceed undisturbed conditions, but only by two percent (553 tons/acre/year for exposed soils during construction, versus 539 tons/acre/year in the undisturbed state). During operations, wind erosion rates would be 296 tons/acre/year, substantially lower than undisturbed conditions (BLM 2010). While the above results were specific to the BSPP site, due to similarities in the type of construction activities and the underlying soil type, wind erosion rates within the Project site would likely show similar minor adverse changes.

Wind erosion caused by the Project is an issue addressed in the air quality analysis due to the potential for wind erosion to cause increases in fugitive dust emissions (PM_{10} and $PM_{2.5}$). As described in Section 4.2, potential increases in fugitive dust emissions would be addressed through development and implementation of the Dust Control Plan, as required by Mitigation Measure AQ-1. The Plan would include the use of BLM-approved dust palliatives along unpaved access roads, watering graded areas on the solar plant site and the off-site linear corridors, treatment of soil stockpiles with soil stabilizers or durable protective covers or tarps, vehicle speed limits, and use of windbreaks to minimize wind speeds. The analysis provided in Section 4.2, is equally applicable to the issue of soil loss via wind erosion, and the Dust Control Plan would be equally effective at reducing potential impacts.

4.7.3.2 Alternative 2: Resource Avoidance Alternative

The types of impacts of Alternative 2 on soil resources and geologic hazards would be the same as those identified for Alternative 1. The severity and potential for impacts to Project facilities resulting from adverse soil conditions and seismic-related ground failures would be similar to the Project because the same types of facilities would be built on the same soil types. However, due

to the reduced acreage associated with this alternative, the amount of soil disturbance would be reduced, and there would be fewer structures that would be susceptible to geologic hazards. Therefore, the potential for adverse impacts would be reduced.

While Alternative 2 would reduce impacts compared to the Proposed Action, impacts related to adverse soil and seismic conditions could still be considered adverse. Therefore, the same Mitigation Measures would be required as for the Proposed Action.

4.7.3.3 Alternative 3: Reduced Project Alternative

The types of impacts of Alternative 3 on soil resources and geologic hazards would be the same as those identified for Alternatives 1 and 2. The severity and potential for impacts to Project facilities resulting from adverse soil conditions and seismic-related ground failures would be similar to the Project because the same types of facilities would be built on the same soil types. However, because the acreage associated with this alternative would be lower than that of Alternatives 1 and 2, the amount of soil disturbance would be reduced, and there would be fewer structures that would be susceptible to geologic hazards. Therefore, the potential for adverse impacts would be lower than that for Alternatives 1 and 2.

While Alternative 3 would reduce impacts compared to the Proposed Action, impacts related to adverse soil and seismic conditions could still be considered adverse. Therefore, the same Mitigation Measures would be required as for the Proposed Action.

4.7.4 Application of CEQA Significance Thresholds

The DQSP would be in a seismically active region, and people and structures could be exposed to seismic ground shaking. In addition, impacts resulting from secondary seismic effects, including ground-shaking, settlement, and hydrocompaction, may be potentially significant. However, geotechnical design considerations for structures shall be in accordance with applicable requirements of the 2010 CBC, the County of Riverside Municipal Code, and any applicable building and seismic codes in effect at the time the grading plans are approved. Additionally, with implementation of Mitigation Measure GEO-1, impacts would be considered less than significant during construction, operation, maintenance, and decommissioning.

GEO-1) Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving:

1. **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.**
2. **Strong Seismic ground shaking.**
3. **Seismic-related ground failure, including liquefaction.**
4. **Landslides.**

The potential for surface fault rupture, seismic-related ground failure (including liquefaction), and landslides on Alternatives 1, 2, or 3 are very low. However, the Project site is in a seismically active region, and people and structures could be exposed to seismic ground shaking. Implementation of Mitigation Measure GEO-1 requires site-specific geotechnical investigations

to determine site specific parameters for foundation design and engineering. With implementation of Mitigation Measure GEO-1, impacts would be reduced to less than significant levels for Alternatives 1, 2, or 3.

GEO-2) Would the Project result in substantial soil erosion or the loss of topsoil?

Implementation of Alternatives 1, 2, or 3 would result in an increase in the potential for wind erosion during construction due to earth-moving and removal of vegetative cover. Wind erosion would be managed through implementation of the Applicant's Dust Control Plan, as required by Mitigation Measure AQ-1. Wind erosion would be substantially reduced during operations of Alternatives 1, 2, or 3 due to soil compaction. Impacts associated with wind erosion would be less than significant for construction, operation, maintenance, and decommissioning.

The potential for water erosion to result in substantial soil erosion or loss of topsoil is discussed in Section 4.20. The potential for water erosion under Alternative 2 or Alternative 3 would be reduced from that of Alternative 1 because of the smaller Project area and avoidance of drainages under the Resource Avoidance Alternative. Implementation of a construction SWPPP (as required by Mitigation Measure WATER-1) and integration of stormwater management controls into the Project design (as required by Mitigation Measure WATER-2) would prevent erosion of onsite soils, as well as prevent the potential for increasing stormwater flow rates which could increase erosion in downstream areas. With these mitigation measures, impacts associated with water erosion would be less than significant for construction, operation, maintenance, and decommissioning of Alternatives 1, 2, or 3.

GEO-3) Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

The Project area is flat, so the potential for landslides or lateral spreading under Alternatives 1, 2, or 3 is very low. However, the site is underlain by alluvial fan deposits of relatively unconsolidated, medium-dense materials, and they may be unstable to support structures in the vicinity of the operations and maintenance facility and the On-Site Substation, and could be susceptible to settlement or subsidence. In addition, because the Project site is associated with alluvial fans, the potential for hydrocompaction of collapsible soils could exist.

As discussed in Chapter 2, *Proposed Action and Alternatives*, the Applicant's pre-construction geotechnical field investigations would be used to evaluate the potential for settlement and hydrocompaction and would, if necessary, be used to modify the design for buildings and PV mountings. In order to ensure that this proper geotechnical information is developed, Mitigation Measure GEO-1 would require the Applicant's site-specific geotechnical report to determine the potential for settlement and hydrocompaction, as well as the appropriate seismic design parameters necessary to develop adequate engineering designs and construction plans for Alternatives 1, 2, or 3. Mitigation Measure GEO-1 would ensure compliance with the 2013 CBC, and would be sufficient to minimize risks associated with settlement. This potentially significant impact would be reduced to a level considered less than significant with implementation of Mitigation Measure GEO-1 under Alternatives 1, 2, or 3.

GEO-4) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life and property?

The soils on the Alternatives 1, 2, or 3 site are not expected to have expansive characteristics (USDA 1969). The additional geotechnical investigation required in Mitigation Measure GEO-1 would provide site-specific Project design and construction recommendations if needed to address any expansive soils. Expansive soils, if present, would be adequately addressed through standard engineering and construction practices and implementation of geotechnical recommendations, if applicable. Mitigation Measure GEO-1 would reduce any significant impacts to a level considered less than significant under Alternatives 1, 2, or 3.

GEO-5) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

During operations of Alternatives 1, 2, or 3, sanitary needs would be supplied by a septic system and leach field located near the O&M Building. The onsite sanitary system would require construction and annual operating Onsite Wastewater Treatment System (OWTS) permits from the County. As part of the geotechnical investigations required in Mitigation Measure GEO-1, soil percolation tests would be performed in order to demonstrate that an on-site septic system and leach field is feasible at the planned location, and additional testing may be performed in accordance with Riverside County test procedures prior to final leach field design. The specific location of the leach field and septic system may be adjusted based on the results of preliminary percolation tests. Mitigation Measure GEO-1 would reduce any significant impacts to a level considered less than significant under Alternatives 1, 2, or 3.

GEO-6) Would the Project be subject to geologic hazards, such as seiche, mudflow, or volcanic hazard?

There are no bodies of water in proximity to the Alternatives 1, 2, or 3 site, and the site is not near the shoreline or within 50 feet of sea level; therefore, hazards from a seiche or tsunami are considered to be negligible. There are no hillside areas within the Alternative 1, 2, or 3 vicinity that would generate mudflow. In addition, no known active volcanic features occur in the Alternative 1, 2, or 3 vicinity. No impacts would occur.

GEO-7) Would the Project change topography or ground surface relief features?

The topography of the Alternative 1, 2, and 3 areas is very flat, which is also the desirable topography for the solar facility. Construction would not substantially grade, excavate, or require modifying any existing topography. Therefore, implementation of Alternatives 1, 2, or 3 would not significantly change site topography or ground surface relief features.

GEO-8) Would the Project create cut or fill slopes greater than 2:1 or higher than 10 feet?

Construction of Alternatives 1, 2, or 3 would not substantially grade, excavate, or create cut and fill slopes greater than 2:1 or higher than 10 feet, or require modifying any existing topography. Therefore, no impacts would occur, and no mitigation is needed under Alternatives 1, 2, or 3.

GEO-9) Would the Project result in grading that affects or negates subsurface sewage disposal systems?

There are no known existing subsurface sewage disposal systems. Therefore, no impacts would occur, and no mitigation is needed under Alternatives 1, 2, or 3.

GEO-10) Would the Project change deposition, siltation, or erosion that may modify the channel of a river or stream or the bed of a lake?

Site preparation for the proposed solar arrays under Alternatives 1, 2, or 3 could result in modification of current site drainage and erosional processes, and these could result in modifying erosion and sedimentation characteristics downstream of the Project area. Mitigation Measure WATER-2 would require that the Applicant develop and implement a Comprehensive Drainage, Stormwater, and Sedimentation Control Plan prior to construction. The Applicant has modeled stormwater runoff, and concluded that development of the entire study area would cause minor impacts to the existing drainage shed area. The Project site is relatively flat, and has large natural depressions which store stormwater flow and attenuate outflow from the site. Effects of Alternative 1 on stormwater flow during a 100-year storm event would include an increase in flow velocity of 0.04 feet per second, and an increase in outflow off of the Project site of about 2.6 percent (TLA Engineering and Planning 2011). These flows would be mitigated through onsite drainage basins designed to accommodate the increased volume of flow. With implementation of Mitigation Measure WATER-1 and WATER-2 in Section 4.20, impacts would be reduced to less than significant levels.

The impacts of Alternatives 2 and 3 would be reduced even further, as these alternatives would occupy only a portion of the entire study area, and would avoid major active drainages. With implementation of Mitigation Measure WATER-1 and WATER-2 in Section 4.20, impacts would be reduced to less than significant levels.

GEO-11) Would the Project result in any increase in water erosion either on- or off-site?

See GEO-2 and GEO-10 above. The soils under Alternatives 1, 2, or 3 would be subject to wind and water erosion during construction activities. Mitigation Measure WATER-2 would require that the Applicant develop and implement a Comprehensive Drainage, Stormwater, and Sedimentation Control Plan prior to construction. The Plan would identify site surface water runoff patterns and develop mitigation measures that prevent excessive and unnatural soil deposition and erosion throughout and downslope of the Project area and Project-related construction areas. The Applicant has modeled stormwater runoff, and concluded that development of the Project site would cause minor impacts to the existing drainage shed area. The Project site is relatively flat, and has large natural depressions which store stormwater flow and attenuate outflow from the site. Effects of Alternative 1 on stormwater flow during a 100-year storm event would include an increase in flow velocity of 0.04 feet per second, and an increase in outflow off of the Project site of about 2.6 percent (TLA Engineering and Planning 2011). These flows would be mitigated through onsite drainage basins designed to accommodate the increased volume of flow. Mitigation Measure WATER-1 would require development and implementation of a SWPPP, which would prevent excessive and unnatural soil deposition and erosion throughout and downslope of the Project area and Project-related construction areas, and would also include measures for non-stormwater discharge and waste management. The SWPPP

would also prevent offsite migration of contaminated stormwater, changes in pre-Project storm hydrographs, or increased soil erosion. Impacts would be less than significant; no additional mitigation is recommended for Alternative 1.

The impacts of Alternatives 2 and 3 would be reduced even further, as these alternatives would occupy only a portion of the entire study area, and would avoid major active drainages. Mitigation Measure WATER-1 would require development and implementation of a SWPPP, which would prevent excessive and unnatural soil deposition and erosion throughout and downslope of site under Alternatives 2 and 3. The SWPPP would also prevent offsite migration of contaminated stormwater, changes in pre-Project storm hydrographs, or increased soil erosion. Impacts would be less than significant; no additional mitigation is recommended for Alternatives 2 or 3.

GEO-12) Would the Project be impacted by or result in an increase in wind erosion and blowsand, either on- or off-site?

See analysis for GEO-2 above. With implementation of the Applicant's Dust Control Plan, as required by Mitigation Measure AQ-1, impacts would be less than significant for Alternatives 1, 2, or 3.

GEO-13) Be an incompatible land use located adjacent to a state classified or designated area or existing surface mine.

The Alternative 1, 2, and 3 sites are not located adjacent to a state classified or designated area or existing surface mine.

GEO-14) Expose people or property to hazards from proposed, existing or abandoned quarries or mines.

Alternatives 1, 2, or 3 would not expose people or property to hazards from proposed, existing, or abandoned quarries or mines.

4.7.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.7 would be maintained. The potential for relatively large earthquakes to occur is regional, and is not related specifically to the DQSP. In the absence of the Project, the potential for seismic activity would be no different than with the Project. Soils underlying the site may still be subject to hydrocompaction and may contain corrosive properties. If no further Projects are developed on the Project site, no structures would be built that would be exposed to these hazards. Because there would no development of the site, there would be no impacts related to erosion and/or land subsidence.

4.7.6 Cumulative Impacts

The geographic scope for the analysis of cumulative impacts associated with geologic hazards would be limited to the DQSP Project area. The presence of other projects in the cumulative scenario would have no effect on either the severity or the probability of geological hazards or geotechnical challenges associated with seismicity and/or the character of underlying soils. Such issues are site-specific, and are unaffected by the presence of other projects in the cumulative scenario. Therefore, there are no cumulative impacts associated with geologic hazards (impacts GEO-1, GEO-3 through GEO-6, GEO-8, and GEO-9), or with modification of topography (impact GEO-7).

For impacts to soil resources, including soil erosion, the geographic scope of impacts would include the watershed in which the Project is located. The applicable projects listed in Tables 4.1-1 and 4.1-2 which are in the watershed include Interstate 10, DPV1, West-wide Section 368 Energy Corridor, Blythe PV Project, DPV2, CRSS, RE Crimson Solar Project, Desert Southwest Transmission Line, and BMSP. The temporal scope of the Project's contribution to cumulative impacts would include the entire period from Project construction through Project decommissioning.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

The greatest potential for cumulative impacts with respect to soil erosion would be during the construction or decommissioning phases of any of the reasonably foreseeable future projects. Concurrent construction and decommissioning of the reasonably foreseeable future projects with the Proposed Action could potentially result in higher levels of impacts. The O&M phase of projects is also included in the temporal scope of cumulative impacts because minor alterations in topography and the addition of impervious surfaces could combine to produce cumulative impacts. However, impacts during the operational phase of the projects are expected to be minimal.

Project construction, O&M, and decommissioning of the Project could contribute to cumulative soil erosion impacts. However, SWPPPs (such as the one required in Mitigation Measure WATER-1), and Comprehensive Drainage, Stormwater, and Sedimentation Control Plans (such as the one required in Mitigation Measure WATER-2) are standard construction industry practice, as well as legal requirements for projects over specified thresholds. The DQSP would be required to operate under these requirements, as would the other projects in the watershed. Because soil erosion would be controlled on each individual project, the potential for cumulative soil erosion impacts would be low, and the Project would not contribute to cumulative impacts associated with soil erosion (impacts GEO-2, and GEO-10 through GEO-12).

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 2 to cumulative soil erosion impacts would be lower from those associated with the Proposed Action, because Alternative 2 would occupy only a portion of the entire study area, and would avoid major active drainages. As with the Proposed Action, Alternative 2 would require implementation of a SWPPP under Mitigation Measure WATER-1),

and a Comprehensive Drainage, Stormwater, and Sedimentation Control Plan under Mitigation Measure WATER-2. Other projects in the watershed would also be required to comply with similar regulatory requirements.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 3 to cumulative soil erosion impacts would be lower from those associated with the Proposed Action and Alternative 2, because Alternative 3 would a smaller portion of the Project area, and would avoid major active drainages. As with the Proposed Action, Alternative 3 would require implementation of a SWPPP under Mitigation Measure WATER-1, and a Comprehensive Drainage, Stormwater, and Sedimentation Control Plan under Mitigation Measure WATER-2. Other projects in the watershed would also be required to comply with similar regulatory requirements.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. There would be no change to the existing stormwater drainage on the Project site, and therefore no contribution to cumulative soil erosion impacts.

4.7.7 Residual Impacts

Following implementation of the BMPs described in WATER-1 and WATER-2, all adverse impacts on geology and soil resources resulting from construction, operations, and decommissioning of the Project and alternatives would be avoided or substantially reduced.

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4.8 Global Climate Change

4.8.1 Methodology for Analysis

This section evaluates the effects of greenhouse gas (GHG) emissions that would be generated from the Project, as well as the consistency of the Project with the applicable plans and programs that have been implemented by various Federal, state, and local agencies with jurisdiction over the Project area. The section quantifies the potential GHG emissions from construction and operation, as well as reduction of GHG emissions due to fossil-fuel based electricity displacement.

4.8.1.1 CEQA Significance Criteria

The effects of Project-specific GHG emissions are cumulative, and therefore global climate change impacts are addressed as a cumulative, rather than a direct, impact. The guidance for determining significance of impacts has been developed from the requirements of AB 32. The guideline addresses the potential cumulative impacts that a project's GHG emissions could have on global climate change. Based on Appendix G of the state CEQA Guidelines and the County of Riverside CEQA Environmental Assessment Form, the following criteria indicate that a project could have potentially significant impacts to global climate change if it would:

GHG-1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

As discussed in Section 15064.4 of the CEQA Regulations, the determination of the significance of GHG emissions requires a good-faith effort to assess the significance of impacts from GHG emissions, considering:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The MDAQMD CEQA and Federal Conformity Guidelines (August 2011) specifies 100,000 tons per year (tpy) CO_2e and 548,000 pounds per day (lbs/day) CO_2e as thresholds for significance. Riverside County uses a significance threshold of 3,000 MT CO_2e per year. For projects that exceed this threshold, project-specific mitigation is required, and should demonstrate a 25 percent reduction from the business as usual scenario. These significance criteria are used to provide a context for the magnitude of Project emissions in relation to its contribution to the cumulative impact of global climate change.

4.8.1.2 Methodology for Estimating GHG Emissions

Project GHG emissions estimates were developed by the Applicant, and reported in their Air Quality and Greenhouse Gas Technical Study (URS 2015). This study was peer reviewed by BLM staff and consultants. In addition, to supplement the technical GHG emissions information prepared by URS, BLM conducted additional calculations of estimated carbon sequestration and fossil fuel displacement. The methods used to estimate Project construction, operation, and decommissioning emissions are described in Section 4.8.3 below.

4.8.1.3 GHG Emissions Impact Analysis

Independent of NEPA, but pursuant to 40 CFR Part 98, *Mandatory Reporting of Greenhouse Gases Rule,* the US Environmental Protection Agency (USEPA) requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2e emissions per year (USEPA 2013).

For the purposes of this analysis, the annualized GHG emissions for the Project and alternatives are compared to the Federal GHG mandatory emissions reporting threshold of 25,000 MT per year to determine whether the GHG emissions would contribute substantially to global climate change. Annualized emissions are calculated by adding the total emissions associated with construction, operations, and decommissioning, and then dividing them by the total lifespan of the Project, which is 30 years. For purposes of CEQA analysis, annualized GHG emissions for the Project and alternatives are compared to the MDAQMD threshold of 100,000 tons per year, and the Riverside County threshold of 3,000 MT per year, to determine whether the GHG emissions are significant under CEQA. Comparison of Project emissions to these thresholds is presented in Table 4.8-2.

4.8.1.4 Climate Change

Climate change is expected to result in a suite of additional potential changes that could affect the natural environment, in a manner that is relevant to the Project. The potential for climate change to affect the Project is discussed qualitatively.

4.8.2 Applicant-Proposed Measures

There are no APMs proposed to address potential effects from GHGs and global climate change.

4.8.3 Direct and Indirect Impacts

4.8.3.1 Alternative 1: Proposed Action

Construction

Direct GHG emissions associated with construction are associated with vehicles, equipment, and generators. These emissions were estimated using equipment lists and construction scheduling information from the Applicant. Mass emissions of all criteria pollutants and GHGs from onsite diesel-fueled construction equipment were estimated using equipment-specific OFFROAD2011/2007 software published by the CARB. ARB's EMFAC2014 model was used to generate vehicle class specific emission factors for GHGs for diesel and gasoline fueled on-road vehicles. The analysis used an assumption of a 25-month construction period with 5

construction days per week (21 work-days per month). The weight and speed for equipment and vehicles were assumed from EMFAC/OFFROAD guidance, EPA AP-42, and experience from other similar solar and construction projects.

The analysis included emissions from vehicles and equipment used both onsite and offsite during construction. Onsite equipment and vehicles included earth moving equipment for site preparation, delivery vehicles, worker vehicles, water trucks, and fuel trucks. The analysis assumed that electricity to support Project construction would be supplied by four onsite generators. Offsite equipment and vehicles included worker vehicles, as well as delivery trucks for Project components, fuel, concrete, aggregate, and water.

The emissions were calculated for each month during the construction period. To allow comparison of the emissions to the regulatory standards based on annualized emissions, the 12 months which represented the highest emissions, months 10 through 21, were used.

The analysis assumed a maximum of 810 vehicle trips per day during peak construction. Workers were assumed to commute an average of 35 miles. A total of 14,400 truck deliveries of equipment, materials, and fuel were estimated throughout the construction period. Distances assumed for deliveries were 10 miles for fuel, 13 miles for aggregate and concrete, and 30.5 miles for equipment and materials. In addition, the analysis assumed that water to be used for construction would be trucked from offsite, resulting in an additional 57,000 truck deliveries during the construction period. All emissions were assumed to occur within the MDAB.

The analysis assumed there would be no indirect emissions associated with Project construction. The power supply for construction was assumed to be onsite generators, so there would be no offsite emissions associated with offsite power supply sources.

Table 4.8-1 shows the total GHG emissions for each month of Project construction. Construction would generate a total of 20,084 MT CO_2e over a period of 25 months. This results in annualized construction emissions of 669 MT per year over the 30 year direction of the Project.

Table 4.8-1. Monthly GHG Emissions Associated with Project Construction

Month	CO_2 (MT)	CH_4 (MT)	N_2O (MT)	Total CO_2e (MT)
1	219.14	0.01	0.01	221.15
2	422.69	0.03	0.01	426.75
3	203.56	0.01	0.01	205.60
4	426.72	0.03	0.01	431.04
5	581.18	0.04	0.02	587.30
6	957.47	0.06	0.03	966.94
7	957.47	0.06	0.03	966.94
8	957.47	0.06	0.03	966.94
9	957.47	0.06	0.03	966.94
10	957.47	0.06	0.03	966.94
11	957.47	0.06	0.03	966.94
12	957.47	0.06	0.03	966.94
13	957.47	0.06	0.03	966.94

Table 4.8-1. Monthly GHG Emissions Associated with Project Construction

Month	CO_2 (MT)	CH_4 (MT)	N_2O (MT)	Total CO_2e (MT)
14	957.47	0.06	0.03	966.94
15	957.47	0.06	0.03	966.94
16	957.47	0.06	0.03	966.94
17	1,232.42	0.07	0.03	1,244.18
18	1,232.42	0.07	0.03	1,244.18
19	1,232.47	0.07	0.03	1,244.23
20	1,123.36	0.07	0.03	1,134.17
21	1,123.36	0.07	0.03	1,134.17
22	900.16	0.05	0.02	908.69
23	470.74	0.03	0.01	475.18
24	94.48	0.01	0.00	95.57
25	94.48	0.01	0.00	95.57
Total for Construction				**20,084**

Operation and Maintenance

Vehicle Exhaust

The GHG emissions from vehicles and equipment used during operation were estimated using the same methodology described above for construction. The analysis assumed five full-time workers, and water trucks to transport up to 38 AF of water per year. A total of 25 trips per day were assumed for worker commuting and deliveries of materials. As shown in Table 4.8-2, onsite emissions are estimated to be 1.3 tons per year of CO_2e, and offsite emissions are estimated to be 306 tons per year of CO_2e.

Circuit Breaker Fugitive Sulfur Hexafluoride (SF_6)

Emissions of sulfur hexafluoride (SF_6) could be released into the atmosphere due to equipment failure or leakage from electrical equipment such as circuit breakers and transformers that contain SF_6. Although the Applicant has not provided detailed descriptions of the type of electrical equipment or estimates of volumes of SF_6 that would be present onsite, it is likely that Project electrical components would include this material. Project components are commercially available that are hermetically sealed to prevent the escape of SF_6 into the atmosphere. Emissions of SF_6 from a hermetically sealed circuit breaker can only occur due to equipment failure as there is no ability for the user to refill or extract SF_6 due to the factory seal. The California Air Resources Board (CARB) defines hermetically sealed circuit breakers as being designed to be gas-tight and sealed for life (CARB 2014). Project analyses for other power plant projects typically include an assumption that there could be a small leak rate even for hermetically sealed equipment, and generally conclude that the contribution of SF_6 to the overall estimates of Project GHG emissions are not significant. However, to ensure that actual Project operations are consistent with this analysis, a Mitigation Measure, GHG-1, is required to ensure that any electrical equipment that contains SF_6 be hermetically-sealed.

Carbon Sequestration

Occupation of the Project site by solar arrays would eliminate carbon sequestration that currently occurs by vegetation. The rate of existing carbon uptake by desert vegetation is estimated to be equivalent to 1.48 MT of CO_2 per acre per year, based on a study of Mojave Desert vegetation (Wohlfahrt et al. 2008). Based on the proposed Project acreage of 3,831 acres, the equivalent loss in carbon uptake would be 5,670 MT of CO_2e per year.

Emissions from Equivalent Fossil Fuel-Based Energy

The Project is proposed to produce approximately 450 MW of electrical energy, which would be more than 2.25 billion kilowatt hours (kWh) of electrical energy per year. The Project is not directly resulting in the closure, or preventing the construction of, a fossil fuel facility, so is not being directly credited with GHG reductions. However, for comparison, GHG emissions for a conventional fossil-fuel combustion power plant producing the same electrical energy (kWh) per year as the Project facility are 0.35 and 1.0 MT CO_2e per MWh of electricity produced by gas turbine and coal-fired plants, respectively. Gas turbine and coal-fired plants are estimated to produce approximately 787,500 and 2,250,000 MT CO_2e, respectively, as compared to 1,280 MT CO_2e per year from the Project.

Decommissioning

Decommissioning of the Project would involve removal of the solar equipment and facilities, and transporting all components offsite. Equipment used for decommissioning would generally be similar to that used for construction. However, decommissioning is expected to occur over a shorter duration of approximately one year. Conservatively, the annual GHG emissions for decommissioning are estimated to be one-half that of construction.

Comparison to Thresholds

The combined, annualized emissions of Project construction, operations, and decommissioning are presented in Table 4.8-2. Comparison of those annualized emissions to the MDAQMD and Riverside County thresholds shows that the Project would not exceed any of the thresholds, and therefore is not expected to contribute significantly to climate change through the emission of GHGs.

Table 4.8-2. Annualized GHG Emissions Associated with Proposed Action Construction,

Annual Emissions	CO_2 (tons)	CH_4 (tons)	N_2O (tons)	Total GHG – CO_2e (tons)	Total GHG – CO_2e (MT)
Total construction emissions (amortized over 30 years)[2]	729	0.05	0.02	736	669
Onsite emissions in operation[3]	1.31	0.00	0.00	1.3	1.2
Offsite emissions in operation[3]	304	0.01	0.00	306	278
Estimated decommissioning emisssions[4]	365	0.02	0.01	368	334
Total Project (tons/year)	1,399	0.08	0.03	1,411	1,282

Table 4.8-2. Annualized GHG Emissions Associated with Proposed Action Construction,

Annual Emissions	CO_2 (tons)	CH_4 (tons)	N_2O (tons)	Total GHG – CO_2e (tons)	Total GHG – CO_2e (MT)
MDAQMD CEQA annual threshold (tons/year)	NA	NA	NA	100,000	NA
Riverside County CEQA threshold (MT/year)	NA	NA	NA	NA	3,000
Exceed the thresholds (yes/no)	NA	NA	NA	No	No

Notes:
1 – Note that values in Table 4.8-1 are in MT, while Table 4.8-2 presents emissions in both tons and MT. Comparison of values among tables is not exact due to rounding.
2 – Summed from 25 monthly emissions estimates in URS (2015), then divided by 30 year period.
3 – From Table 4-4 in URS (2015)
4 – Estimated to be assumed to be one-half of construction, amortized over a 30-year period, tons/year.

4.8.3.2 Alternative 2: Resource Avoidance Alternative

The GHG emissions associated with Alternative 2 are expected to be the same as those associated with the Proposed Action. The analysis of Alternative 2 assumed that construction would involve the same number of construction workers and duration of construction, the same number of onsite construction vehicles and equipment, and the same number of truck deliveries of project components and equipment. Alternative 2 would involve ground disturbance of a smaller area than the Proposed Action, but the reduction in GHG emissions associated with grading of a smaller area would not be substantial, and overall GHG emissions would be affected only slightly by this difference in the alternatives.

Because the output of Alternative 2 would be the same as Alternative 1, the amount of fossil fuel-based GHG emissions that would be avoided would be the same as Alternative 1. Gas turbine and coal-fired plants are estimated to produce approximately 787,500 and 2,250,000 MT CO_2e, respectively, as compared to 1,280 MT CO_2e per year from Alternative 2.

Based on the rate of existing carbon uptake by desert vegetation and the Alternative 2 size of 2,845 acres, the equivalent loss in carbon uptake would be 4,211 MT CO_2e per year.

Because the GHG emissions of Alternative 2 would be the same as the Proposed Action, GHG emissions associated with Alternative 2 would not exceed any of the thresholds, and therefore are not expected to contribute significantly to climate change through the emission of GHGs.

4.8.3.3 Alternative 3: Reduced Project Alternative

The GHG emissions associated with Alternative 3 would be slightly lower than those associated with the Proposed Action. The analysis of Alternative 3 assumed that construction would involve the same number of construction workers and duration of construction, and the same number of onsite construction vehicles and equipment. Alternative 3 would involve ground disturbance of a smaller area than the Proposed Action, but the reduction in GHG emissions associated with grading of a smaller area would not be substantial. The primary difference in GHG emissions would be emissions associated with truck deliveries of Project components and

equipment. Under Alternative 3, truck deliveries would be reduced by about 25 percent, as compared to the Proposed Action and Alternative 2.

The output of Alternative 3 would be 285 MW, or approximately 63 percent that of the Project. The equivalent amount of fossil fuel-based GHG emissions that would be avoided would be the same as Alternative 1. Gas turbine and coal-fired plants are estimated to produce approximately 496,125 MT CO_2e for gas turbine and 1,417,500 MT CO_2e for coal-fired, as compared to 1,261 MT CO_2e per year from Alternative 3.

Based on the rate of existing carbon uptake by desert vegetation and the Alternative 3 size of 2,112 acres, the equivalent loss in carbon uptake would be 3,126 MT CO_2e per year.

The combined, annualized emissions of construction, operations, and decommissioning for Alternative 3 are presented in Table 4.8-3. Comparison of those annualized emissions to the MDAQMD and Riverside County thresholds shows that Alternative 3 would not exceed any of the thresholds, and therefore is not expected to contribute significantly to climate change through the emission of GHGs.

Table 4.8-3. Annualized GHG Emissions Associated with Alternative 3 Construction, Operation, and Decommissioning

Annual Emissions	CO_2	CH_4	N2O	Total GHG – CO_2e
Total construction emissions (amortized over 30 years, tons/year)[1]	715	0.04	0.02	722
Onsite emissions in operation (tons/year)[2]	1.31	0.00	0.00	1.3
Offsite emissions in operation (tons/year)[2]	304	0.01	0.00	306
Estimated decommissioning emissions (tons/year)[3]	358	0.02	0.01	361
Total Project (tons/year)	1,378	0.07	0.03	1,390
Total Project (MT/year)	1,250	0.06	0.03	1,261
MDAQMD CEQA annual threshold (tons/year)	NA	NA	NA	100,000
Riverside County CEQA threshold (MT/year)	NA	NA	NA	3,000
Exceed the thresholds (yes/no)	NA	NA	NA	No

Notes:
1 – Summed from 25 monthly emissions estimates in URS (2015), scaled down for reduced number of truck deliveries, then divided by 30 year period.
2 – From Table 4-4 in URS (2015)
3 – Estimated to be assumed to be one-half of construction, amortized over a 30-year period, tons/year.

4.8.4 Climate Change Effects on the Project

4.8.4.1 Alternative 1: Proposed Action

Climate change is expected to result in environmental changes that could affect the natural environment in the Project area. The potential for climate change effects on the Project is discussed below.

Hydrologic Resources

In California and much of the western U.S., climate change is expected to result in several potential effects related to water resources. These include potential sea level rise, potential changes to snowpack and snowmelt periods, changes to the water flow available to dilute wastewater, changes to surface water temperature, changes in the frequency of flooding and droughts, and potential reductions in surface water supply (DWR 2008; DWR 2011). Of these, the issues of sea level rise, snowpack and snowmelt, dilution of wastewater, and change in surface water temperature are not relevant to the Project.

Flooding, Drainage, and Erosion

Climate change is anticipated to affect the frequency and intensity of extreme weather events, including large storm events and droughts in western watersheds, such as the Colorado River basin where the Project is located (DWR 2008; DWR 2011). Although the degree of change is a subject of substantial debate, most investigations concur that the Colorado River watershed, including the Project site and its vicinity, would experience an increase in the frequency and intensity of high rainfall and flood events (Cooley et al. 2009). This could result in an increase in potential stormwater runoff and flooding, and an increase in erosion and sedimentation onsite and downstream from the site. Increases in the intensity or frequency of droughts are discussed in terms of water resources availability, below.

As discussed in Section 2.3.7.9, the current stormwater flow system into and through the Project would be maintained, and stormwater would not be diverted. The analysis of the effect of stormwater flow on Project structures, presented in Section 4.20, shows that, although site grading and vegetation removal would alter stormwater flow onsite, the amount of scour that would occur would not threaten the stability of Project structures.

Water Resources Availability

As discussed in Section 3.20, the Project site and immediate vicinity contain only ephemeral drainages and washes. There are no perennial streams or other perennial waterways located on site, or upstream of the site. The project may use surface water from PVID for water supply during construction or operation. The impact of this use is evaluated in Section 4.20, and indicates that there would be no impacts to surface water supplies. Therefore, changes to surface water availability in the region would not affect the Project.

The Project may rely on groundwater for water supply during both construction and operation. An analysis of the amount of groundwater available for the Project is presented in Section 4.20, and concludes that sufficient groundwater is available to support Project construction. Estimates of the potential effects of climate change on the frequency and amount of rainfall in the west vary; however, most studies concur that in the desert southwest, some degree of reduction of precipitation would occur. Seager et al. (2007) and Christensen et al. (2004) completed extensive reviews and modeling of potential climate change effects on the Colorado River watershed and other southwestern watersheds, including several climate change scenarios. The authors concluded that precipitation and runoff within the watershed could generally decrease, while periods of drought could increase, resulting in an overall reduction in the availability of groundwater in the region. These scenarios could result in moderate to substantial effects on water supply availability, and could affect the ability of water rights holders along the Colorado River to divert their full entitlements. However, the timeframe of these changes would be long-

term. The Project would only rely on relatively large volumes of groundwater for Project construction, which would be completed within 25 to 48 months. Long-term climate changes would not be expected to substantially affect groundwater availability within this short timeframe. Therefore, a reduction in groundwater availability due to global climate change is not expected to affect the Project.

Biological Resources

Biological resources could be affected as a result of climate change in California. Distribution patterns of species are generally expected to shift according to regional changes in temperature and precipitation, while the location of wildlife migration corridors and the extent of invasive species also could be altered (USFWS 2010).

Fisheries

The Project would not contain any perennial or other surface waters that contain fisheries resources, and would not affect or be affected by changes in fisheries characteristics.

Habitat Values of Mitigation Lands

As discussed in Sections 4.3 and 4.4, the Project would require mitigation for biological resources values that would be lost as a result of the loss of habitat associated with the Project. The proposed mitigation lands would be required to be equivalent in terms of habitat value and at replacement ratios as specified in Sections 4.3 and 4.4. Climate change could result in adverse effects on biological resources located on these mitigation lands. However, given that mitigation lands must be similar in biological resources value as compared to lost resources on site, it is anticipated that the effect of climate change on the mitigation lands would be similar to the effect that would have occurred on the Project site, if the Project were not built. Therefore, potential reductions in the biological resources values of mitigation land values resulting from climate change are expected to be similar to onsite conditions in the absence of the Project.

Hazards

Climate change studies have concluded that hazards associated with wildland fires and increased potential for heat stress for workers during heat waves could increase as a result of climate change (IPCC 2007; ISDR 2008).

Wildland Fire Risks

Potential risks associated with wildland fire are discussed in Section 4.21, *Wildland Fire*. As described in Section 3.21, the risk of wildland fire to the Project would be moderate based on the FHSZ, due to the sparse vegetation. As discussed in Section 2.3.7.3, fire protection systems would be included in the Project design. Although risks for wildland fire could increase due to an increase in the frequency of extreme weather events that could generate wildfires, such as increased frequency of drought and heat waves (IPCC 2007; ISDR 2008), the potential for wildland fire to affect Project structures would still be low. Therefore, no additional mitigation is recommended.

Heat Waves

The frequency of occurrence and the severity of heat waves could increase as a result of climate change (IPCC 2007; ISDR 2008). Heat waves could result in increased potential risk to Project employees working outside, especially during construction. All Project activities would occur under a site-specific Health and Safety Plan, as well as Federal OSHA and CalOSHA requirements. The Applicant proposes to modify work schedules as needed, in summer, to protect workers from heat stress. No further actions are recommended.

Soil Moisture

As discussed in Section 3.20, almost all rainfall that occurs in this region of California is lost through evaporation and evapotranspiration, and therefore soil moisture levels at the Project site are characteristically low. Because climate change could result in increases in droughts and heat waves, and an overall reduction in precipitation, long-term effects of climate change could include a reduction in soil moisture content at the site and regionally. However, reductions in soil moisture content would not affect Project-related operations, and would not require any change in water resources usage.

Fugitive Dust

As discussed in Section 4.2, *Air Resources*, fugitive dust emissions would require mitigation during operation of the Project. Mitigation Measure AQ-2 would mitigate operation period fugitive dust emissions to ensure compliance with state and Federal regulations and requirements. Although climate change could result in some degree of reduction of soil moisture, as discussed above, soil moisture is already very low under current conditions. Any further reductions in soil moisture would not be substantial in terms of the absolute amount of water contained in onsite soils. Therefore, any potential further reduction in soil moisture associated with climate change is not anticipated to result in a substantial increase in fugitive dust emissions.

4.8.4.2 Alternative 2: Resource Avoidance Alternative

The potential effects of climate change on Alternative 2 would be the same as those discussed for Alternative 1, except that the area affected by Alternative 2 would be reduced.

4.8.4.3 Alternative 3: Reduced Project Alternative

The potential effects of climate change on Alternative 3 would be the same as those discussed for Alternative 1, except that the area affected by Alternative 3 would be reduced.

4.8.5 Application of CEQA Significance Thresholds

GHG-1) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

As shown in Table 4.8-2, Alternative 1 would not generate GHG emissions that would exceed applicable thresholds of significance for GHG emissions. The GHG emissions associated with

Alternative 2 are expected to be the same as those associated with Alternative 1. As shown in Table 4.8-3, the GHG emissions of Alternative 3 would be reduced from those associated with Alternative 1. Overall, the total GHG emissions for all phases amortized over the life of Alternatives 1, 2, or 3 would not exceed MDAQMD or Riverside County thresholds, and would be less than significant. In addition, Alternatives 1, 2, or 3 would result in a substantial benefit by offsetting GHG emission from fossil-fuel-generated electricity, and would assist in meeting the state's adopted Renewable Portfolio Standard (RPS).

GHG-2) Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Since Alternatives 1, 2, or 3 would result in a significant offset of regional air emissions associated with energy production from fossil fuels, a net reduction in GHG emissions could result. Alternatives 1, 2, or 3 would serve to meet the state's goals for the RPS, which has been identified by the state as a means of meeting the goals of AB 32 to reduce emissions to 1990 levels by the year 2020.

However, because Alternative 3 would generate 285 MW, as compared to the 450 MW that would be generated under Alternative 1 or Alternative 2, Alternative 3 would not be as effective as the other action alternatives in off-setting GHG emissions from fossil fuels.

4.8.6 Alternative 4: No Action Alternative

4.8.6.1 Direct and Indirect Impacts

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.8 would be maintained. None of the GHG emissions-related impacts of the action alternatives would occur. However, Alternative 4 would not displace the generation of GHG emissions from existing fossil-fueled power plants and would result in the continued long-term adverse impact associated with annual GHG emissions compared to implementation of any of the action alternatives.

4.8.7 Cumulative Impacts

By definition, the global climate change impacts discussed in Section 4.8 constitute a cumulative impact analysis, because they are the result of the cumulative GHG emissions from all sources world-wide.

All Action Alternatives

Construction, Operations, and Decommissioning

The direct GHG emissions associated with construction, operation, and decommissioning of any of the action alternatives would contribute to cumulative global climate change effects on resources not just within the Project area, but throughout the world. The Proposed Action and

Alternative 2 would generate approximately 1,280 MT per year CO_2e, and Alternative 3 would generate approximately 1,261 MT per year CO_2e, which would not contribute considerably to a cumulative GHG impact. In addition, the removal of plants from within the Project area would reduce the amount of carbon intake from terrestrial vegetation, but only by a minimal amount. Virtually all of the cumulative projects described in Section 4.1.5, Cumulative Scenario Approach, would also contribute to global warming due to the generation of short-term and/or long-term GHG emissions associated with their construction, operation, and decommissioning.

As discussed in the Final Western Solar Plan issued in July 2012 (BLM and DOE 2012), utility-scale solar energy development contributes relatively minor GHG emissions, generally from emissions from heavy equipment used during the construction phase, and from vehicular emissions. However, utility-scale solar energy production also results in reduced CO_2 emissions from utilities by offsetting emissions from new fossil fuel energy sources. Overall, CO_2 emission offsets from increased solar energy production can range from a few percentage points to more than twenty percent in some study area states. According to the analysis in the Western Solar Plan, "an estimated 716 kg (1,578 lb) of CO_2 would be displaced annually per megawatt-hour of solar energy produced" (BLM and DOE 2012, § 5.11.1.2. Table 5.11-1, and § 5.11.4). Since GHG emissions are aggregated across the global atmosphere and cumulatively contribute to climate change, it is not possible to determine the specific impact on global climate change from GHG emissions associated with the action alternatives, or with the other cumulative projects (impact GHG-1).

The reduction in overall GHG emissions associated with the displacement of fossil fuel power production as a result of the Project would contribute, beneficially, to a reduction in global climate change impacts throughout the world. The renewable energy projects included among the cumulative projects would similarly result in long-term decreases in GHG emissions by displacing electricity from fossil fuel-fired power plants.

Because an objective of the Project is to comply with Federal and state policies intended to reduce GHG emissions, the Project would not contribute to cumulative conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (impact GHG-2).

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. Alternative 4 would not generate any GHG emissions. However, the No Project Alternative also would not assist in meeting AB 32 or Executive Order S-3-05 emission reduction targets, nor would it offset emissions generated by fossil-fuel-based sources of energy. Therefore, the No Project Alternative could have a greater contribution to global climate change than the action alternatives.

4.8.8 Residual Impacts

The long-term displacement of GHG emissions from fossil fuel-based power would be a residual beneficial impact of the Project. There would still be GHG emissions after mitigation has been incorporated; however, they would not be a substantial contribution to climate change.

4.9 Hazards and Hazardous Materials

4.9.1 Methodology for Analysis

This analysis of potential impacts of the Proposed Action and Alternatives related to Hazards and Hazardous Materials focuses on possible impacts to the health and safety of the public. Impacts are identified and evaluated based on relevant BLM standards, policies, and guidelines. The analysis is based on information provided in the POD, the Applicant's Preliminary Hazardous Materials Management and Emergency Response Plan, and the Phase I Environmental Site Assessment.

Environmental Site Contamination

The analysis evaluates the potential for ground-disturbing activities to expose workers or members of the public to pre-existing site contamination.

Unexploded Ordnance

The analysis evaluates the potential for ground-disturbing activities to encounter unexploded ordnance (UXO).

Risk of Accidents and Spills of Hazardous Materials

This analysis reviews and assesses the potential for the transportation, storage, and use of hazardous materials to impact the health and safety of the public. Hazardous materials, including fuels, lubricants, solvents, adhesives, and soil stabilizers, must be used for Project construction and operation. The analysis examines the type hazardous materials to be used, and the Applicant's proposed procedures for handling, storing, transporting, and disposing of hazardous materials and hazardous wastes.

In their POD and Preliminary Hazardous Materials Management and Emergency Response Plan, the Applicant proposes to use engineering and administrative controls as part of the Proposed Action and Alternatives. Engineering controls are the physical or mechanical systems that can prevent the spill of hazardous material from occurring, or that can either limit the amount of a spill or to a confined area. Examples of engineering controls are storage tanks and secondary containment basins. Administrative controls are the rules and procedures that workers at the facility must follow that would help to prevent accidents or to minimize releases if they do occur. These procedures typically are established in worker safety training and emergency response plans. Both engineering and administrative controls can act as methods of prevention or as methods of response and minimization. In both cases, the goal is to prevent a spill from moving off-site and from causing harm to the public or the environment.

This analysis reviews and evaluates the Applicant's proposed use of hazardous materials as described by the Applicant. In conducting this analysis, these three steps were followed:

Step 1: Review the types and quantities of hazardous materials proposed for onsite use as listed in the POD and Preliminary Hazardous Materials Management and Emergency Response Plan.

Step 2: Review and evaluate the engineering and administrative controls proposed by the Applicant to prevent spills and respond to accidents.

Step 3: Evaluate the potential impacts on the public of a greatest-consequence spill of hazardous materials, as reduced by the engineering and administrative controls proposed by the Applicant. When such controls would be sufficient to prevent impacts, no further mitigation is recommended. If additional mitigation measures would further reduce or avoid impacts of the Proposed Action or an Alternative, additional prevention and response controls are proposed.

Public Health

The analysis evaluates the potential for the Proposed Action and Alternatives to increase public exposure to vector-borne diseases and to Coccidioidomycosis, commonly known as valley fever.

Transmission Line Safety and Nuisance

This analysis of potential effects of the Proposed Action and alternatives related to transmission line safety and nuisance evaluates the applicable requirements of design-related laws, ordinances, regulations, standards, and policies. If the gen-tie line and distribution line that would be constructed comply with applicable laws, then the Proposed Action and alternatives would not have a measurable effect related to Transmission Line Safety and Nuisance. Other potential hazards considered include interference with radio- frequency communication, hazardous shocks, nuisance shocks, and EMF exposure. Impacts related to noise from corona discharge are addressed in Section 4.12, *Noise*, and impacts related to fire hazard-related risks are addressed in Section 4.21, *Wildland Fire*.

Emergency Response

The analysis evaluates the Proposed Action and Alternatives to assess potential impacts to public safety that could result if the Proposed Action or an Alternative were to impair implementation of an emergency response or evacuation plan. This assessment first determines whether local emergency response or evacuation plans have been adopted, and then whether the Proposed Action or an Alternative would impede emergency evacuation routes or emergency response actions.

Aircraft Operations

The analysis reviews the Proposed Action and Alternatives with respect to the RCALUCP for Blythe Airport.

Intentionally Destructive Acts

Intentionally destructive acts could include malicious mischief, vandalism, or terrorist attacks. This analysis of impacts related to intentionally destructive acts is based on the screening criteria for vulnerability assessments of chemical facilities and electric power infrastructure and assesses the following questions: Is the Project a critical electric infrastructure facility? Does the facility use any of the chemicals on the list of regulated substances in 40 CFR §68.130? What would be

the estimated severity of impact from a release of hazardous materials from the site or from power disruption?

Abandoned Mine Lands

The Applicant's Phase I Environmental Site Assessment did not identify any abandoned mine lands within one mile of the Project site. Therefore, the Proposed Action and alternatives would result in no impacts related to abandoned mine lands.

4.9.1.1 CEQA Significance Criteria

The criteria listed below were used to determine if the Project would cause or exacerbate hazards on and in the vicinity of the Project. These criteria are the same as the significance criteria for Hazards and Hazardous Materials listed in the CEQA Environmental Checklist, Appendix G of the state CEQA Guidelines. Under CEQA, the proposed Project and alternatives would have a significant impact on hazards and hazardous materials if they would:

HAZ-1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

HAZ-2) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

HAZ-3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

HAZ-4) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

HAZ-5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard for people residing or working in the project area.

HAZ-6) For a project within the vicinity of a private airstrip, would result in a safety hazard for people residing or working in the project area.

HAZ-7) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

HAZ-8) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The following additional significance criteria from the County of Riverside CEQA Environmental Assessment Form are used in the analysis. A Project could have potentially significant impacts if it would:

HAZ-9) Result in an inconsistency with an Airport Master Plan.

HAZ-10) Require review by the Airport Land Use Commission.

4.9.2 Applicant-Proposed Measures

Section 2.3.7.1 describes the elements of the Applicant's Preliminary Hazardous Materials Management and Emergency Response Plan, which would be completed and provided to BLM and the County for review and approval prior to the beginning of construction. The completed Plan would identify expected wastestreams; specify how waste would be sampled, analyzed, and characterized; and specify potential waste disposal locations for different categories of wastes. Elements of the Plan relevant to waste management would include waste determination procedures, waste disposal locations, container management, inspection requirements, preparedness and prevention requirements, and requirements for packaging, placarding, manifests, and record-keeping and reporting. The Plan would also specify BMPs to be used in the case of discovery of unanticipated hazardous materials.

BMPs to be implemented during construction would include:

- Keep materials in their original containers with the original manufacturer's label and resealed when possible;
- Avoid storage of excessive quantities of chemicals by procuring and storing only the amounts needed;
- Encourage mobile refueling of vehicles on site to minimize stationary tank storage of fuel and other hazardous materials;
- Follow manufacturer's recommendation for proper handling and disposal;
- Conduct routine inspections to ensure that all chemicals on-site are being stored, used, and disposed of appropriately;
- Perform timely maintenance on vehicles/equipment that are leaking oil or other fluids, and place drip plans under the leak when the vehicle/equipment is parked prior to the maintenance event;
- Ensure that no hazardous materials, chemicals, fuels, or lubricating oils would be stored within 100 feet of any wetland, water body, or water supply well, or within any designated municipal watershed;
- Refuel all construction equipment at least 100 feet from any water body, water well or wetland;
- Ensure that all personnel dealing with hazardous materials are properly trained in the use and disposal of these materials in accordance with local, state, and Federal regulations;
- Ensure that all storage tanks proposed to be brought on site will meet applicable codes; and
- Maintain Material Safety Data Sheets available on the site for use during Project construction and operation.

Oil storage on site will be limited to the minimum amount necessary to safely maintain and operate equipment and transformers during construction and O&M.

The Applicant proposes to store up to 2,500 gallons each of diesel and gasoline during construction, which exceeds 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous substances above the threshold planning quantity. As a

result, the Applicant would develop and implement a Hazardous Materials Business Plan (HMPB) in coordination with Riverside County Department of Environmental Health and County fire officials. In addition, because the Project would involve onsite storage of more than 1,320 gallons of oil or oil products, the Applicant would develop and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan. The Applicant has developed a summary outline of an SPCC Plan, which describes the issues that would be addressed in a completed Plan. Issues to be addressed would include a diagram showing the facility and locations of oil storage, description of the type of oil, methods used to prevent and control releases, and requirements for inspections, testing, employee training, and reporting. Appropriately sized and supplied spill containment kits would be maintained onsite in the area of the O&M Building, and operations employees would be trained on the appropriate spill prevention, response, and containment procedures.

The Applicant has developed a preliminary summary of a SWPPP, which would be developed and implemented prior to Project construction. These would include managing and disposing of wastes in accordance with applicable regulations and prohibiting the storage of hazardous materials or re-fueling of vehicles within 100 feet of a wetland, water body, or water supply well.

If the Project implements ESSs, the units would be situated in pre-fabricated metal containers that have an appropriate fire suppression system designed in compliance with Section 608 of the International Fire Code. The units would also have apron containment systems to prevent the escape of spills or leaks of fluids. The units would also be designed to comply with Article 480 of the electrical code, which specifies requirements for insulation and venting.

As discussed in Section 4.1.6, the impact analysis assumes that the APMs have been implemented, and these measures are therefore requirements for approval of the Project. The APMs are to be incorporated into the EICMPP/MMRCP, along with the agency-required mitigation measures.

4.9.3 Direct and Indirect Impacts

4.9.3.1 Alternative 1: Proposed Action

Environmental Site Contamination

Construction

Construction would require earth-moving, grading, trenching, and other activities which would disturb site soils. These activities could result in release of contaminated materials, exposure of site workers to metals and other contaminants present in the soils, and/or exposure of the public to contaminants if fugitive dust was to be blown offsite.

As described in Section 3.9.1.1, the Phase I Environmental Site Assessment conducted for the Project site in 2015 did not identify evidence of any releases of hazardous substances or petroleum products on the BLM portion of the Project site, or in the one-mile search radius, based on records searches and visual surveys. The site is undeveloped, so no past use of hazardous materials on the site has been documented. De minimis conditions identified on the BLM land during the site reconnaissance included trash and debris. Therefore, the potential for encountering hazardous substances in containers or in contaminated soils on the BLM land is low.

The Phase I ESA documented that two nearby groundwater supply wells on BLM land were observed to be open and unsecured, presenting the potential for groundwater contamination to be present. There have been no subsequent response actions, including securing of the groundwater wells or sampling of environmental media, to verify whether groundwater contamination currently exists.

Hazardous substances, in the form of partially-filled oil and lubricant containers and other trash and debris, were observed on the private land parcel. There has been no further investigation or environmental sampling to determine if soil or groundwater contamination has resulted. Therefore, there is a potential for encountering hazardous substances, contaminated soil, and/or contaminated groundwater during intrusive work on the private land parcel.

During construction activities for the Proposed Action, the potential exists that undocumented subsurface utilities or tanks might be encountered and damaged, resulting in a release of a hazardous material. Based on the results of the Applicant's Phase I Environmental Site Assessment, the potential for the presence of subsurface utilities is expected to be low. However, the potential for such incidents would be further reduced by thoroughly screening for subsurface structures in areas prior to commencement of any subsurface work. Screening activities would include use of DigAlert (Underground Services Alert of Southern California), visual observations, hand digging, and use of buried line locating equipment.

To establish baseline environmental conditions, Mitigation Measure HAZ-1 requires the Applicant to perform a Phase II Environmental Site Assessment (ESA) prior to beginning construction. The scope of the Phase II ESA would include groundwater sampling in the vicinity of the two uncapped onsite wells, followed by capping of the onsite wells, to establish baseline groundwater quality and protect against future releases. In addition, the Phase II ESA would include removal of oil and lubricant containers identified on the private land parcel in the Phase I ESA, sampling of soil to identify potentially contaminated areas, and removal of any identified contaminated soil.

Fugitive dust would be generated during construction activities. Because construction would be temporary, long-term exposures of site workers to fugitive dusts are not anticipated to occur. Implementation of dust suppression measures in Mitigation Measures AQ-1 and AQ-2 would reduce the potential for worker exposure to any hazardous materials that may be present in site soils by reducing the amount of dust released from construction activities.

Operation and Maintenance

Operations would involve a much lower amount of ground disturbance than construction, and would thus have a lower potential for exposing site workers or the public to hazardous substances in site soils. Ground disturbance during operations would be limited to small-scale repair and maintenance projects. In addition, these activities would likely occur in areas which had already been disturbed during construction, and would therefore be unlikely to encounter unexpected hazardous substances.

Fugitive dust generation associated with disturbance would also be of a much smaller scale than that associated with construction. Implementation of Mitigation Measure HAZ-1, which requires the Applicant to prepare and implement a site-specific Hazardous Materials Management and Emergency Response Plan, would also apply to operations and maintenance activities.

Decommissioning

Like construction, decommissioning is also expected to require earth-moving, grading, trenching, and other activities which would disturb site soils. The scale of these activities would be reduced from that of construction. In addition, these activities would likely occur in areas which had already been disturbed during construction, and would therefore be unlikely to encounter unexpected hazardous substances. Therefore, the potential for exposure of site workers and the public to hazardous substances during decommissioning is expected to be lower than that for construction.

Fugitive dust would be generated during decommissioning activities. Because decommissioning would be temporary, long-term exposures of site workers to fugitive dusts are not anticipated to occur. Mitigation Measures AQ-1, AQ-2, and HAZ-1 would apply to decommissioning, so would minimize potential exposures to existing hazardous materials during decommissioning.

Unexploded Ordnance

Construction

As discussed in Section 3.9.1.1, ordnance was used at the former Blythe Army Airfield located approximately 1.5 miles north of the Project site, and UXO discoveries have been reported during cultural resource studies in the area, and as part of construction efforts at the Modified BSPP site north of I-10. No indication was found suggesting these materials were present on the Project area during the Phase I ESA. However, because of the former use of public lands in the area for military training, there is potential for discarded military munitions, other explosives, and unexploded ordnance (collectively, UXO) to be encountered on the surface, or in subsurface excavations.

UXO presents an immediate risk of acute physical injury from fire or explosion resulting from accidental or unintentional detonation. Surface and shallow sub-surface UXO could be disturbed by vehicles, workers walking, and/or excavation using shovels or similar hand tools, and deeper subsurface UXO could be disturbed by the earth movement and excavation processes that would be required for development of the Proposed Action. With proper training of site workers in the recognition, avoidance, and procedures to be implemented if suspect UXO are discovered, as required by Mitigation Measure UXO-1, the potential risks to workers from encountering UXO would be reduced, but not completely avoided.

Operation and Maintenance

Operations would involve a much lower amount of ground disturbance than construction, and would thus have a lower potential for exposing site workers or the public to UXO. Ground disturbance during operations would be limited to small-scale repair and maintenance projects. In addition, these activities would likely occur in areas which had already been disturbed during construction, and would therefore be unlikely to encounter UXO.

Decommissioning

Like construction, decommissioning is also expected to require earth-moving, grading, trenching, and other activities which would disturb site soils. The scale of these activities would be reduced from that of construction. In addition, these activities would likely occur in areas which had

already been disturbed during construction, and would therefore be unlikely to encounter UXO. Therefore, the potential for exposure of site workers and the public to UXO during decommissioning is expected to be lower than that for construction.

Risk of Accidents and Spills of Hazardous Materials

Construction

Hazardous materials which would be used for construction of the Proposed Action include fuels, herbicides, lubricants, solvents, adhesives, and soil stabilizers. The use, storage, and disposal of hazardous materials and wastes associated with the Proposed Action could result in potential adverse health and environmental impacts if these materials were released to the environment through accidents or spills. Potential direct and indirect impacts of such releases could include degradation of soil and water quality, or exposure of humans and wildlife to hazardous materials.

As discussed in Sections 2.3.7.1 and 4.9.2, the Applicant has developed preliminary management plans related to hazardous materials and waste management. These include the Preliminary Hazardous Materials Management and Emergency Response Plan, Hazardous Materials Business Plan (HMBP), SWPPP, and SPCC Plans. These plans specify procedures for storage, use, transport, and disposal of hazardous materials and waste.

The Applicant proposes to store up to 2,500 gallons each of diesel and gasoline during construction, which exceeds 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous substances above the threshold planning quantity. As a result, the Applicant would develop and implement a HMBP in coordination with Riverside County Department of Environmental Health and County fire officials. The HMBP would include an inventory of hazardous materials, site map and building floor plans, emergency response plan, training information, a description of hazardous materials handling and segregation, and plans for monitoring.

Because the Project would involve onsite storage of more than 1,320 gallons of oil or oil products, the Applicant would develop and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan. The Applicant has developed a summary outline of an SPCC Plan, which describes the issues that would be addressed in a completed Plan. Issues to be addressed would include a diagram showing the facility and locations of oil storage, description of the type of oil, methods used to prevent and control releases, and requirements for inspections, testing, employee training, and reporting. Appropriately sized and supplied spill containment kits would be maintained onsite in the area of the O&M Building, and operations employees would be trained on the appropriate spill prevention, response, and containment procedures.

The SWPPP would define procedures for managing and disposing of wastes in accordance with applicable regulations, and would also define storage locations and fueling procedures to protect water resources. The SPCC Plan would address the storage of oil or oil products, and would include a diagram showing the facility and locations of oil storage, description of the type of oil, methods used to prevent and control releases, methods to be used to clean-up and dispose of recovered materials, and requirements for inspections, testing, employee training, and reporting.

Compliance with existing regulations would reduce hazards, but would not completely avoid hazards to construction workers, the public, and the environment. Although the Applicant proposes to refuel construction equipment at least 100 feet from any water body, water well or

wetland, soil and groundwater contamination could still result from releases from fuel tanks on mobile fuel trucks or equipment, or as a result of the refueling process. Mitigation Measure WATER-1 would require that all refueling and maintenance would occur at a designated area, within secondary containment with a volume sufficient to contain the largest fuel tank. In addition to the spill response and reporting requirements of the HMBP, SPCC, and SWPPP, Mitigation Measure WATER-1 would require the Applicant to notify BLM within 24 hours of any release outside of containment. Once construction has begun, Mitigation Measure WATER-1 would require periodic sampling and analysis of groundwater to verify that Project construction does not release contamination.

Routine transportation of hazardous materials to the site, and wastes from the site, could create a hazard to the public or the environment if materials were improperly handled, or indirectly could result in an incremental increase in the potential for accidents. The Applicant would comply with Federal and state regulations regarding the transportation of hazardous materials and wastes, with stringent packaging requirements, licensing and training for hazardous materials truck operators, chemical handlers, and hazardous waste haulers.

Because of the relatively low volumes of hazardous materials and fuels onsite at any time, requirements for immediate response to releases, and flat topography that limits site runoff, it is unlikely that any releases would extend beyond the boundaries of the Project area before they are identified and addressed. The closest residence (apparent occupied mobile home trailer) is located approximately 3,700 feet north of the northeast corner of the Proposed Action boundary. The next two closest sensitive air quality receptors are located in the residential community of Nicholls Warm Springs/Mesa Verde approximately 4,800 feet north of the northeast corner of the Proposed Action boundary. Although members of the public could potentially be present outside the Proposed Action area fence, there are no adjacent land uses or local residents which would result in the presence of large number of people who could be impacted by a release of hazardous materials.

Operation and Maintenance

Operation and maintenance of the Proposed Action would require the transport, use, and disposal of hazardous materials and hazardous wastes similar to those associated with construction. During operation, the only chemicals would be fuels and lubricants for vehicles. The Hazardous Materials Management and Emergency Response Plan, HMBP, SWPPP, and SPCC Plans described for construction would also be applicable to operation of the Proposed Action. The HMBP would be reviewed and approved by the local CUPA, the Riverside County Department of Environmental Health, which would be responsible for facility inspections. In general, the amounts of hazardous materials onsite during operations are expected to be much lower than those associated with construction. Therefore, the potential for releases of hazardous materials to present a risk to the public is expected to be lower than that associated with construction.

Limited pesticide use to control noxious weeds would occur, in accordance with a BLM-approved Integrated Weed Management Plan (IWMP). Pesticide use, if needed, would be limited to non-persistent, immobile pesticides applied only in accordance with manufacturer directions and all regulations for pesticide use. Any pesticide applications would be conducted within the framework of BLM and Department of Interior policies.

Similar to construction, compliance with existing regulations would reduce hazards, but would not completely avoid the potential for releases. During operations, Mitigation Measure WATER-1 would require periodic site inspection, sampling, and analysis of groundwater and the leach field area to verify that Project operations do not release contamination.

Decommissioning

As discussed in Section 2.3.6, the Applicant has developed a Draft Decommissioning and Site Reclamation Plan (Desert Quartzite 2015) which describes the general outlines of the proposed decommissioning activities. Prior to decommissioning, a new Phase I Environmental Site Assessment would be conducted to document existing conditions at the time, including the potential presence of hazardous materials or environmental conditions that occurred ruing construction or operations. If hazardous materials or environmental conditions are identified, a Phase II ESA that would include sampling and, if necessary, response actions, would be undertaken before decommissioning begins. All hazardous materials would be removed from the site before structures are removed. Most of the Proposed Action facilities would be composed of materials that can be recycled, including glass, semiconductor material, aluminum, steel, and wiring. Materials to be removed from the site and recycled or resold include the steel tables and posts, wiring, and PV modules themselves. PV modules damaged during construction or removed at the end of the life of the Proposed Action would either be recycled or resold, or would be disposed of in accordance with local, state, and Federal regulations. Decommissioning of the Proposed Action would require the use of fuel and lubricants for construction vehicles and equipment, as well as the transport and disposal of hazardous materials used at the facility.

As with construction and operations, compliance with existing laws and regulations would reduce, but not completely avoid potential impacts related to the routine use, storage, transportation, and disposal of hazardous materials associated with decommissioning. The site inspection, monitoring, and other requirements of Mitigation Measure WATER-1 would apply throughout decommissioning, to verify that decommissioning activities do not release contamination.

Public Health

Construction, Operations, and Decommissioning

As described in Section 3.9.1.2, incidence of WNV in Riverside County, and therefore the risk to public health from this vector-borne disease, is extremely low. Implementation of Mitigation Measure WATER-2, which requires a comprehensive drainage, stormwater, and sedimentation control plan, would reduce the potential for unintentional ponding of water onsite or downstream of the Proposed Action area. This would reduce the risk of mosquito breeding on or near the site, and therefore would reduce the risk for workers and the public of contracting vector-borne diseases.

Also described in Section 3.9.1.2, incidence of valley fever in Riverside County is low. Fugitive dust generated during construction, operations, or decommissioning could expose workers to *Coccidioides* fungal spores that may be present in desert soils. Implementation of Mitigation Measure AQ-1 would reduce fugitive dust during the construction phase, which would reduce the risk to workers of contracting valley fever.

Transmission Line Safety and Nuisance

Construction and Decommissioning

As the gen-tie line would not be energized except during operations, there would be no hazard or nuisance from the gen-tie line associated with construction or decommissioning.

Operations

Transmission line safety and nuisance issues may be associated with operation of the Project gen-tie line. Impacts associated with operation of the gen-tie line may include interference with radio-frequency communication, hazardous and nuisance shocks, and electro-magnetic field (EMF) exposure.

Interference with Radio-Frequency Communication

Transmission lines may have surface irregularities, surface discontinuities, and related corona discharge which may affect radio-frequency communication. Although corona can generate high frequency energy that may interfere with broadcast signals or electronic equipment, this is generally a concern only for lines of 345 kV and above. Gap discharges or arcs also can be a source of high frequency energy. Gap discharges occur when an arc forms across a gap in loose or worn line hardware. It is estimated that over 90 percent of interference problems for electric transmission lines are due to gap discharges. When identified, gap discharges can be located and remedied by utilities. Although corona or gap discharges related to high frequency radio and television interference impacts would be limited and very localized.

To reduce the potential for radio frequency interference, Mitigation Measure TLSN-1 would require the Applicant to limit the conductor surface electric gradient in accordance with the IEEE Radio Noise Design Guide for High-Voltage Transmission Lines, and to provide a mechanism for resolution of any interference complaints. In addition, the proposed gen-tie line would be built and maintained in accordance with applicable standards and regulations, including those prescribed by the CPUC and State of California Rules for Overhead Electric Line Construction, General Order No. 95 (GO-95).

Hazardous and Nuisance Shocks

Operation of the proposed gen-tie line could result in hazardous and/or nuisance shocks. The Applicant would be responsible in all cases for ensuring compliance with regulations and industry standards for grounding-related practices within and near the right-of-way, which would minimize the potential for such shocks.

Electric and Magnetic Field Exposure

Operation of the proposed gen-tie line could generate EMF. Public concerns exist regarding EMF and the possibility of deleterious health effects from living near high-voltage lines, as well as CRT computer monitor interference.

Available evidence as evaluated by the CPUC, CEC, and other regulatory agencies is that a significant health hazard to humans exposed to such fields has not been established (see, e.g., CPUC 2006). There are no health-based Federal regulations or industry codes specifying environmental limits on the strengths of fields from power lines. Most regulatory agencies believe that health-based limits are inappropriate at this time and the industry should continue its current practice of siting power lines to reduce exposure.

The gen-tie line would be situated in uninhabited, open desert land with no existing structures. The proposed gen-tie would traverse BLM-administered land, with the nearest residences more than 3,000 feet north. The general absence of residences in the immediate vicinity of the gen-tie line means that there would be no residential field exposure.

Although there is a potential for EMF to cause CRT computer monitor interference, the proposed gen-tie line would be situated on largely uninhabited desert land where computer monitor use is not common. Further, the liquid crystal display (LCD) technology used for portable computer monitors has replaced the CRT technology in most computer monitor applications. Moreover, recognition of computer monitor interference as a problem in the monitor industry has resulted in manufacturers who specialize in shielding enclosures and software programs that adjust the monitor's vertical refresh rate. Therefore, there are not expected to be any impacts associated with CRT computer monitor interference.

Emergency Response

Construction, Operations, and Decommissioning

The Proposed Action site is located on undeveloped land in a rural area, and would be accessed by secondary roads. The Riverside County Operational Area Emergency Operations Plan (RCFD 2006) does not designate emergency evacuation routes. Therefore, the Proposed Action would not impair implementation of, or physically interfere with, an adopted emergency response or evacuation plan. Local roads are unlikely to be used as emergency routes because of the remote location of the Proposed Action site.

There would be two access routes to the Proposed Action area. Primary access for construction and operations would be from Exit 236 off of I-10, following State Route 78 and 16th Avenue/Seeley Avenue to the facility gate. An emergency access route would be from 22nd Avenue. The Applicant's Hazardous Materials Management and Emergency Response Plan would comply with applicable Riverside County regulations, and would be coordinated with the Riverside County Fire Department.

Aircraft Operations

As discussed in Section 3.9.1.5, the Proposed Action would be located approximately 1.5 miles from the Blythe Airport. The 160-acre private land area subject to the Riverside County Conditional Use Permit is located outside of the Blythe Airport Influence Area (AIA). As shown in Figure 3.9-1, a portion of the BLM land is located within the AIA, within airport Compatibility Zone E. The relationship between the Proposed Action, Resource Avoidance Alternative, and Reduced Project Alternative to the airport is shown in Table 4.9-1.

Table 4.9-1. Relationship of Action Alternatives to Blythe Airport

	Alt. 1 - Proposed Action	Alt. 2 – Reduced Acreage	Alt. 3 – Reduced Project
Distance to Airport Boundary (miles)	1.59	1.51	1.62
Acreage of Overlap with Compatibility Zone E (acres)	424	311	56
Length of Gen-Tie Line within Compatibility Zone E (miles)	0	1.08	1.08

The compatibility criteria for projects within Compatibility Zone E are shown in Table 3.9-1. In Zone E, airspace review is required for structures on private land greater than 100 feet in height, but there are no other specific land use restrictions. Although a portion of the Proposed Action area would be located within Zone E, the gen-tie line for the Proposed Action would be located outside of Zone E, and no portion of it would be located on private lands. Therefore, the Proposed Action would not involve structures on private land greater than 100 feet in height within Compatibility Zone E.

Section 1.5.3 of the RCALUCP lists major land use actions within an AIA which may require review by the ALUC. These actions include those which have the potential to create electrical or visual hazards to aircraft in flight, including electrical interference, lighting, glare, impaired visibility, and actions that have the potential to cause attraction of birds. The ALUC performed a review of consistency with the RCALUCP, and found on November 6, 2015, that the Project would be consistent with the RCALUCP.

Portions of a transmission line that are not in an AIA still could potentially be subject to Federal Aviation Administration (FAA) review through the Form 7460-1 process if within 20,000 feet (3.8 miles) of a runway, especially if located at a higher elevation than the runway. For projects that involve transmission line and poles which could affect navigable airspace, the FAA requires the Applicant to file Forms 7460-1, Notice of Proposed Construction or Alteration, and 7460-2, Notice of Actual Construction or Alteration. Following the Applicant's submittal of Form 7460-1 for the FAA's safety assessment at least 45 days prior to the start date of construction, the FAA would conduct a safety analysis to determine the effect of the proposed towers and transmission line on aircraft operations. The Proposed Action must receive a "Determination of No Hazard to Air Navigation" in order to proceed.

The FAA conducted a similar safety analysis for the adjacent BMSP, which would share the same gen-tie corridor as the DQSP. For that project, the FAA issued "No Hazard to Air Navigation" Determinations for the 230 kV gen-tie line structures. However, because the gen-tie line would be located within 20,000 feet of a runway, it still could potentially be subject to FAA review through the Form 7460-1 process. The height of the proposed gen-tie line towers for the DQSP has not been established, but they may be up to 135 feet in height. Therefore, it is unknown if the DQSP would receive a similar "No Hazard" determination, which would be required prior to construction of the Proposed Action. Mitigation Measure HAZ-3 requires that the Applicant receive a "Determination of No Hazard to Air Navigation" in order to proceed.

Construction

Construction of a portion of the Proposed Action would occur within the Blythe Airport Compatibility Zone E. Construction would include the use of cranes to install gen-tie support poles up to 135 feet in height along a length of 2.79 miles of transmission line outside of Zone E, but within 20,000 feet of a runway. During pole installation, the total height of the cranes would extend higher than the proposed towers. In such a situation, a separate notice to the FAA is required. The FAA would consider the proposed construction method, including use of cranes, in its safety assessment. With receipt of an FAA "Determination of No Hazards to Air Navigation," as required by Mitigation Measure HAZ-3, construction of the Proposed Action would not have an adverse effect on aircraft operations.

Operation and Maintenance

Within 5 days of completing construction within the Airport Compatibility Area, the Applicant would be required to submit Form 7460-2 notifying the FAA of completion of construction. With prior receipt of a "No Hazard" determination, DQSP operation and maintenance would not have an adverse effect on aircraft operations.

Decommissioning

Decommissioning activities would be similar to construction activities, and would be considered as part of the safety assessment performed by the FAA. The Applicant may be required to submit Forms 7460-1 and 7460-2 to notify the FAA of any proposed alterations to the gen-tie line and support poles. With receipt of a "No Hazard" determination as required by Mitigation Measure HAZ-3, decommissioning would not have an adverse effect on aircraft operations.

Intentionally Destructive Acts

Construction

As discussed in Section 2.3.3.7, the Proposed Action area would be fenced, with security staffing at the facility entrance gate, throughout construction. The risk to workers or the public from intentionally destructive acts during construction would be low, as public access to the proposed construction and staging areas would be controlled by security and fencing.

Operation and Maintenance

None of the chemicals proposed for use or storage at the solar plant site are on the list of regulated substances in 40 CFR §68.130. Therefore, the DQSP facility would not be covered by the security standards for chemical facilities. The consequences of release of all the hazardous materials used at the facility (diesel fuel, mineral oil, and hydraulic fluid) would not cause a threat to the health and safety of the surrounding community due to the limited quantity and toxicity of the substances, and the large distance to the nearest receptors. As discussed in Section 2.3.3.7, the Proposed Action area would be fenced, with security staffing at the facility entrance gate, throughout operations.

The level of security needed for a particular power plant depends on the threat imposed, the likelihood of an adversarial attack, the likelihood of success in causing a catastrophic event, and the severity of consequences of that event. To determine an appropriate level of security for the nearby BSPP, the CEQA and NEPA lead agencies for that project used an internal vulnerability assessment decision matrix modeled after the U.S. Department of Justice Chemical Vulnerability Assessment Methodology, NERC guidelines, and U.S. Department of Homeland Security regulations to determine that the Proposed Action would fall into the "low vulnerability" category.

Given the similarities in location and the general type of proposed facility for the DQSP, and the site security measures proposed by the Applicant, the BLM has determined that the DQSP also would fall into the "low vulnerability" category. The Applicant's security measures would minimize the potential for power disruptions or hazardous materials release caused by outside parties. The risk to workers or the public from damage to the DQSP as a result of intentionally destructive acts would be low because public access would be controlled by security and fencing.

Once the Proposed Action is constructed, site security would be provided 24 hours per day, 7 days per week, through a combination of the fencing, lighting, security patrols, and remote monitoring by electronic security systems. Surveillance systems such as security cameras, motion detectors, or heat sensors may be installed along the site perimeter.

Decommissioning

The risk to workers or the public from intentional acts during decommissioning would be low, because public access to construction and staging areas would be controlled by security and fencing.

4.9.3.2 Alternative 2: Resource Avoidance Alternative

Environmental Site Contamination

Construction, Operations, and Decommissioning

The results of the Phase I ESA discussed in Section 4.9.3.1, including the identification of oil and lubricant containers on the private land parcel and the lack of locked caps on two nearby groundwater supply wells, also apply to Alternative 2. The Phase I Environmental Site Assessment conducted for the Project site in 2015 did not identify evidence of any releases of hazardous substances or petroleum products on the BLM portion of the Project site, or in the immediate vicinity, based on records searches and visual surveys. Hazardous substances, in the form of partially-filled oil and lubricant containers and other trash and debris, were observed on the private land parcel, which would be included within Alternative 2. Therefore, the potential for the presence of contaminated soil or groundwater is expected to be the same as the Proposed Action.

To establish baseline environmental conditions, Mitigation Measure HAZ-1 requires the Applicant to perform a Phase II Environmental Site Assessment (ESA) prior to beginning construction. The scope of the Phase II ESA would include groundwater sampling in the vicinity of the two uncapped onsite wells, followed by capping of the onsite wells, to establish baseline groundwater quality and protect against future releases. In addition, the Phase II ESA would include removal of oil and lubricant containers identified on the private land parcel in the Phase I ESA, sampling of soil to identify potentially contaminated areas, and removal of any identified contaminated soil.

Fugitive dust would be generated during construction, operation, and decommissioning of Alternative 2. Implementation of dust suppression measures in Mitigation Measures AQ-1 and AQ-2 would reduce the potential for worker exposure to any hazardous materials that may be present in site soils by reducing the amount of dust released. In addition, implementation of Mitigation Measure HAZ-1, which requires the Applicant to prepare and implement a site-specific Hazardous Materials Management and Emergency Response Plan, would minimize potential exposures to existing hazardous materials if such materials are found to be present on site.

Unexploded Ordnance

Construction, Operations, and Decommissioning

Because all of the land area associated with Alternative 2 is also included within the Proposed Action area, the potential for the presence of UXO is expected to be the same or lower than the Proposed Action.

Risk of Accidents and Spills of Hazardous Materials

Construction

Construction of Alternative 2 would present the same risk of accidents and spills as described for the Proposed Action. The types and volumes of hazardous materials and fuels, and the procedures and regulatory requirements for their management, would be the same as for the Proposed Action. The Preliminary Hazardous Materials Management and Emergency Response Plan, HMBP, SWPPP, and SPCC Plans described for the Proposed Action would also apply to Alternative 2. Mitigation Measure WATER-1 would require that all refueling and maintenance would occur at a designated area, within secondary containment with a volume sufficient to contain the largest fuel tank. In addition to the spill response and reporting requirements of the HMBP, SPCC, and SWPPP, Mitigation Measure WATER-1 would require the Applicant to notify BLM within 24 hours of any release outside of containment. Once construction has begun, Mitigation Measure WATER-1 would require periodic sampling and analysis of groundwater to verify that Project construction does not release contamination.

Compliance with existing regulations would reduce hazards, but would not completely avoid hazards to construction workers, the public, and the environment. Because the solar array area would be smaller for Alternative 2 than for the Proposed Action, Alternative 2 would involve a smaller geographic area and shorter construction period than the Proposed Action. Consequently, the potential for impacts related to releases of hazardous materials associated with the construction of Alternative 2 would be lower than those of Proposed Action. In addition, the potential for onsite releases of hazardous materials to impact the public under Alternative 2 is lower that the Proposed Action because the northern boundary of the solar array field under Alternative 2 would be a further distance from the nearest residents.

Operation and Maintenance

Operation of Alternative 2 would present the same risk of accidents and spills as described for the Proposed Action. The types and volumes of hazardous materials and fuels, and the procedures and regulatory requirements for their management, would be the same as for the Proposed Action. The Preliminary Hazardous Materials Management and Emergency Response Plan, HMBP, SWPPP, and SPCC Plans described for the Proposed Action would also apply to Alternative 2. Mitigation Measure WATER-1 would require that all refueling and maintenance would occur at a designated area, within secondary containment with a volume sufficient to contain the largest fuel tank. In addition to the spill response and reporting requirements of the HMBP, SPCC, and SWPPP, Mitigation Measure WATER-1 would require the Applicant to notify BLM within 24 hours of any release outside of containment. Once construction has begun, Mitigation Measure WATER-1 would require periodic sampling and analysis of groundwater to verify that Project construction does not release contamination.

As discussed in Section 2.5, the Resource Avoidance Alternative would use PV panels that contain a thin semiconductor layer containing CdTe. While CdTe itself is a hazardous substance in an isolated form, the CdTe in the PV panels is bound and sealed within the glass sheets and a laminate material (Fthenakis 2003, Fthenakis 2008). A report by the Norwegian Geotechnical Institute (NGI) notes that "If the modules are destroyed during use and are exposed to rain, emissions can occur; however, a very low vapour pressure and water solubility are expected to result in only trace emissions into the environment" (NGI 2010, p. 13). Additionally, an article that examined the potential for CdTe leaching from commercial rooftop solar PV installations found the worst-case modeled environmental concentrations in soil, air, and groundwater in a California-based scenario, are one to five orders of magnitude below human health screening levels (Sinha et al. 2012). If the Applicant chooses to use CdTe PV panels or panels containing another potentially toxic semiconductor material, implementation of Mitigation Measure HAZ-2, which requires the Applicant to prepare and implement a Broken PV Module Detection and Handling Plan, would minimize the potential for semiconductor leaching from damaged panels and would be required for operations as for construction.

Similar to construction, compliance with existing regulations would reduce hazards, but would not completely avoid the potential for releases. During operations, Mitigation Measure WATER-1 would require periodic site inspection, sampling, and analysis of groundwater and the leach field area to verify that Project operations do not release contamination. The potential for onsite releases of hazardous materials to impact the public under Alternative 2 is lower that the Proposed Action because the northern boundary of the solar array field under Alternative 2 would be a further distance from the nearest residents.

Decommissioning

Decommissioning of Alternative 2 would present the same risk of accidents and spills as described for the Proposed Action. Because the solar array area would be smaller for Alternative 2 than for the Proposed Action, Alternative 2 would involve a smaller geographic area and shorter decommissioning period than the Proposed Action. Consequently, the potential for impacts related to releases of hazardous materials associated with the decommissioning of Alternative 2 would be lower than those of Proposed Action. The Preliminary Hazardous Materials Management and Emergency Response Plan, HMBP, SWPPP, and SPCC Plans described for the Proposed Action would also apply to Alternative 2. In addition, the Applicant's Decommissioning and Site Reclamation Plan would also apply to Alternative 2.

As with construction and operations, compliance with existing laws and regulations would reduce, but not completely avoid potential impacts related to the routine use, storage, transportation, and disposal of hazardous materials associated with decommissioning. The site inspection, monitoring, and other requirements of Mitigation Measure WATER-1 would apply throughout decommissioning, to verify that decommissioning activities do not release contamination. The potential for onsite releases of hazardous materials to impact the public under Alternative 2 is lower that the Proposed Action because the northern boundary of the solar array field under Alternative 2 would be a further distance from the nearest residents.

Public Health

Construction, Operations, and Decommissioning

The impacts of Alternative 2 on public health would be the same as for the Proposed Action. Implementation of Mitigation Measure WATER-2, which requires a comprehensive drainage, stormwater, and sedimentation control plan, would reduce the potential for unintentional ponding of water onsite or downstream of the site. Implementation of Mitigation Measure AQ-1 would reduce fugitive dust during the construction phase of Alternative 2, which would reduce the risk to workers of contracting valley fever.

Transmission Line Safety and Nuisance

The location and operation of the gen-tie line under Alternative 2 would generally be the same as that under the Proposed Action, except the gen-tie line would be longer (3.89 miles in Alternative 2, as compared to 2.79 miles in the Proposed Action). The additional length would not result in the gen-tie line being any closer to residences. Therefore, there would be no impacts associated with Alternative 2.

Emergency Response

Construction, Operations, and Decommissioning

The impacts of Alternative 2 on emergency response capability would be the same as for the Proposed Action. The use of access roads for Alternative 2 would be the same, and the duration of peak construction and total number of truck trips may be reduced from that of the Proposed Action.

Aircraft Operations

Construction, Operations, and Decommissioning

As shown in Table 4.9-1, the distance between the Alternative 2 boundary and the airport property would be approximately the same as the Proposed Action. The acreage which overlaps Compatibility Zone E under Alternative 2 would be reduced to 311 acres, as compared to 424 acres under the Proposed Action. Because there are no open space or density restrictions in Zone E, this difference would not affect any impacts.

For structures on private land, ALUC review of projects for consistency with the ALUCP is required for all structures greater than 100 feet in height in Zone E. The ALUC conducted a similar consistency analysis for the adjacent BMSP, which would share the same gen-tie corridor as the DQSP. For that project, the ALUC found the project to be consistent with the RCALUCP. The height of the proposed gen-tie line towers for the DQSP would be 135 feet in height, similar to that of the BMSP gen-tie line. The RCALUC reviewed Alternative 2, and made a determination on October 21, 2016, that the alternative is consistent with the RCALUCP.

Because the transmission line and poles could affect navigable airspace, the FAA requires the Applicant to file Forms 7460-1, Notice of Proposed Construction or Alteration, and 7460-2, Notice of Actual Construction or Alteration. Following the Applicant's submittal of Form 7460-1 for the FAA's safety assessment at least 45 days prior to the start date of construction, the FAA would conduct a safety analysis to determine the effect of the proposed towers and transmission

line on aircraft operations. The FAA conducted a similar safety analysis for the adjacent BMSP, which would share the same gen-tie corridor as the DQSP. For that project, the FAA issued "No Hazard to Air Navigation" Determinations for the 230 kV gen-tie line structures. Mitigation Measure HAZ-3 requires that Alternative 2 must receive a similar "Determination of No Hazard to Air Navigation" in order to proceed.

Intentionally Destructive Acts

Construction, Operations, and Decommissioning

The potential for intentionally destructive acts associated with Alternative 2 would be the same as for the Proposed Action.

4.9.3.3 Alternative 3: Reduced Project Alternative

Environmental Site Contamination

Construction, Operations, and Decommissioning

The results of the Phase I ESA discussed in Section 4.9.3.1, including the identification of oil and lubricant containers on the private land parcel and the lack of locked caps on two nearby groundwater supply wells, also apply to Alternative 3. The Phase I Environmental Site Assessment conducted for the Project site in 2015 did not identify evidence of any releases of hazardous substances or petroleum products on the BLM portion of the Project site, or in the immediate vicinity, based on records searches and visual surveys. Hazardous substances, in the form of partially-filled oil and lubricant containers and other trash and debris, were observed on the private land parcel, which would be included within Alternative 3. Therefore, the potential for the presence of contaminated soil or groundwater is the same as the Proposed Action.

To establish baseline environmental conditions, Mitigation Measure HAZ-1 requires the Applicant to perform a Phase II Environmental Site Assessment (ESA) prior to beginning construction. The scope of the Phase II ESA would include groundwater sampling in the vicinity of the two uncapped onsite wells, followed by capping of the onsite wells, to establish baseline groundwater quality and protect against future releases. In addition, the Phase II ESA would include removal of oil and lubricant containers identified on the private land parcel in the Phase I ESA, sampling of soil to identify potentially contaminated areas, and removal of any identified contaminated soil.

Fugitive dust would be generated during construction, operation, and decommissioning of Alternative 3. Implementation of dust suppression measures in Mitigation Measures AQ-1 and AQ-2 would reduce the potential for worker exposure to any hazardous materials that may be present in site soils by reducing the amount of dust released. In addition, implementation of Mitigation Measure HAZ-1, which requires the Applicant to prepare and implement a site-specific Hazardous Materials Management and Emergency Response Plan, would minimize potential exposures to existing hazardous materials if such materials are found to be present on site.

Unexploded Ordnance

Construction, Operations, and Decommissioning

Because all of the land area associated with Alternative 3 is also included within the Proposed Action area, the potential for the presence of UXO is expected to be the same or lower than the Proposed Action.

Risk of Accidents and Spills of Hazardous Materials

Construction

Construction of Alternative 3 would present the same risk of accidents and spills as described for the Proposed Action. The types and volumes of hazardous materials and fuels, and the procedures and regulatory requirements for their management, would be the same as for the Proposed Action. The Preliminary Hazardous Materials Management and Emergency Response Plan, HMBP, SWPPP, and SPCC Plans described for the Proposed Action would also apply to Alternative 3. Mitigation Measure WATER-1 would require that all refueling and maintenance would occur at a designated area, within secondary containment with a volume sufficient to contain the largest fuel tank. In addition to the spill response and reporting requirements of the HMBP, SPCC, and SWPPP, Mitigation Measure WATER-1 would require the Applicant to notify BLM within 24 hours of any release outside of containment. Once construction has begun, Mitigation Measure WATER-1 would require periodic sampling and analysis of groundwater to verify that Project construction does not release contamination.

Compliance with existing regulations would reduce hazards, but would not completely avoid hazards to construction workers, the public, and the environment. Because the solar array area would be smaller for Alternative 3 than for the Proposed Action, Alternative 3 would involve a smaller geographic area and shorter construction period than the Proposed Action. Consequently, the potential for impacts related to releases of hazardous materials associated with the construction of Alternative 3 would be lower than those of Proposed Action. In addition, the potential for onsite releases of hazardous materials to impact the public under Alternative 3 is lower that the Proposed Action because the northern boundary of the solar array field under Alternative 3 would be a further distance from the nearest residents.

Operation and Maintenance

Operation of Alternative 3 would present the same risk of accidents and spills as described for the Proposed Action. The types and volumes of hazardous materials and fuels, and the procedures and regulatory requirements for their management, would be the same as for the Proposed Action. The Preliminary Hazardous Materials Management and Emergency Response Plan, HMBP, SWPPP, and SPCC Plans described for the Proposed Action would also apply to Alternative 2. Mitigation Measure WATER-1 would require that all refueling and maintenance would occur at a designated area, within secondary containment with a volume sufficient to contain the largest fuel tank. In addition to the spill response and reporting requirements of the HMBP, SPCC, and SWPPP, Mitigation Measure WATER-1 would require the Applicant to notify BLM within 24 hours of any release outside of containment. Once construction has begun, Mitigation Measure WATER-1 would require periodic sampling and analysis of groundwater to verify that Project construction does not release contamination.

Similar to Alternative 2, Alternative 3 would use PV panels that contain a thin semiconductor layer containing CdTe. If the Applicant chooses to use CdTe PV panels or panels containing another potentially toxic semiconductor material, implementation of Mitigation Measure HAZ-2, which requires the Applicant to prepare and implement a Broken PV Module Detection and Handling Plan, would minimize the potential for semiconductor leaching from damaged panels and would be required for operations as for construction.

Similar to construction, compliance with existing regulations would reduce hazards, but would not completely avoid the potential for releases. During operations, Mitigation Measure WATER-1 would require periodic site inspection, sampling, and analysis of groundwater and the leach field area to verify that Project operations do not release contamination. The potential for onsite releases of hazardous materials to impact the public under Alternative 3 is lower that the Proposed Action because the northern boundary of the solar array field under Alternative 3 would be a further distance from the nearest residents.

Decommissioning

Decommissioning of Alternative 3 would present the same risk of accidents and spills as described for the Proposed Action. Because the solar array area would be smaller for Alternative 3 than for the Proposed Action, Alternative 3 would involve a smaller geographic area and shorter decommissioning period than the Proposed Action. Consequently, the potential for impacts related to releases of hazardous materials associated with the decommissioning of Alternative 3 would be lower than those of Proposed Action. The Preliminary Hazardous Materials Management and Emergency Response Plan, HMBP, SWPPP, and SPCC Plans described for the Proposed Action would also apply to Alternative 3. In addition, the Applicant's Decommissioning and Site Reclamation Plan would also apply to Alternative 3.

As with construction and operations, compliance with existing laws and regulations would reduce, but not completely avoid potential impacts related to the routine use, storage, transportation, and disposal of hazardous materials associated with decommissioning. The site inspection, monitoring, and other requirements of Mitigation Measure WATER-1 would apply throughout decommissioning, to verify that decommissioning activities do not release contamination. The potential for onsite releases of hazardous materials to impact the public under Alternative 3 is lower that the Proposed Action because the northern boundary of the solar array field under Alternative 3 would be a further distance from the nearest residents.

Public Health

Construction, Operations, and Decommissioning

The impacts of Alternative 3 on public health would be the same as for the Proposed Action. Implementation of Mitigation Measure WATER-2, which requires a comprehensive drainage, stormwater, and sedimentation control plan, would reduce the potential for unintentional ponding of water onsite or downstream of the site. Implementation of Mitigation Measure AQ-1 would reduce fugitive dust during the construction phase of Alternative 3, which would reduce the risk to workers of contracting valley fever.

Transmission Line Safety and Nuisance

The location and operation of the gen-tie line under Alternative 3 would generally be the same as that under the Proposed Action, except the gen-tie line would be longer (4.18 miles in Alternative 3, as compared to 2.79 miles in the Proposed Action). The additional length would not result in the gen-tie line being any closer to residences. Therefore, there would be no impacts associated with Alternative 3.

Emergency Response

Construction, Operations, and Decommissioning

The impacts of Alternative 3 on emergency response capability would be the same as for the Proposed Action. The use of access roads for Alternative 3 would be the same, and the duration of peak construction and total number of truck trips may be reduced from that of the Proposed Action.

Aircraft Operations

Construction, Operations, and Decommissioning

As shown in Table 4.9-1, the distance between the Alternative 3 boundary and the airport property would be 1.92 miles, as compared to approximately 1.6 miles under the Proposed Action and Alternative 2. The acreage which overlaps Compatibility Zone E under Alternative 3 would be reduced to 56 acres, as compared to 424 acres under the Proposed Action. Because there are no open space or density restrictions in Zone E, this difference would not affect any impacts.

For structures on private land, ALUC review of projects for consistency with the ALUCP is required for all structures greater than 100 feet in height in Zone E. The ALUC conducted a similar consistency analysis for the adjacent BMSP, which would share the same gen-tie corridor as the DQSP. For that project, the ALUC found the project to be consistent with the RCALUCP. The height of the proposed gen-tie line towers for the DQSP would be 135 feet in height, similar to that of the BMSP gen-tie line. The RCALUC reviewed Alternative 3, and made a determination on October 21, 2016, that the alternative is consistent with the RCALUCP.

Because the transmission line and poles could affect navigable airspace, the FAA requires the Applicant to file Forms 7460-1, Notice of Proposed Construction or Alteration, and 7460-2, Notice of Actual Construction or Alteration. Following the Applicant's submittal of Form 7460-1 for the FAA's safety assessment at least 45 days prior to the start date of construction, the FAA would conduct a safety analysis to determine the effect of the proposed towers and transmission line on aircraft operations. The FAA conducted a similar safety analysis for the adjacent BMSP, which would share the same gen-tie corridor as the DQSP. For that project, the FAA issued "No Hazard to Air Navigation" Determinations for the 230 kV gen-tie line structures. Mitigation Measure HAZ-3 requires that Alternative 3 must receive a similar "Determination of No Hazard to Air Navigation" in order to proceed.

Intentionally Destructive Acts

Construction, Operations, and Decommissioning

The potential for intentionally destructive acts associated with Alternative 3 would be the same as for the Proposed Action.

4.9.4 Application of CEQA Significance Thresholds

HAZ-1) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

As discussed in Section 4.9.2, the Applicant has developed preliminary management plans related to the routine transport, use, and disposal of hazardous materials. There would be no routine emissions of hazardous materials from the facility under Alternatives 1, 2, or 3. Specifications and procedures for storage, use, transport, and disposal of hazardous materials and waste would be defined in the Hazardous Materials Management and Emergency Response Plan, HMBP, SWPPP, and SPCC Plans. The Hazardous Materials Management and Emergency Response Plan would define specific hazardous materials, as well as estimated volumes. The HMBP would include an inventory of hazardous materials, site map and building floor plans, training information, a description of hazardous materials handling and segregation, and plans for monitoring. The SWPPP would define procedures for managing and disposing of wastes in accordance with applicable regulations, and would also define storage locations and fueling procedures to protect water resources. The SPCC Plan would address the storage of oil or oil products, and would include a diagram showing the facility and locations of oil storage, description of the type of oil, methods used to prevent and control releases, and requirements for inspections, testing, employee training, and reporting. Limited pesticide use to control noxious weeds would occur, in accordance with a BLM-approved Integrated Weed Management Plan (IWMP). Pesticide use, if needed, would be limited to non-persistent, immobile pesticides applied only in accordance with manufacturer directions and all regulations for pesticide use. Any pesticide applications would be conducted within the framework of BLM and Department of Interior policies.

The only routine waste discharge would be associated with sanitary wastes disposed in the septic system. Mitigation Measure WATER-1 would require periodic site inspection, sampling, and analysis of groundwater and the leach field area to verify that routine Project activities do not release contamination.

With implementation of Mitigation Measures HAZ-1, HAZ-2, and WATER-1, impacts regarding the routine transport, use, and handling of hazardous materials during construction, operation, and decommissioning of Alternatives 1, 2, or 3 would be reduced to less than significant levels.

HAZ-2) Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As discussed in Section 4.9.2, the Applicant has developed preliminary management plans related to the transport, use, and disposal of hazardous materials. The purpose of these procedures is to minimize the potential for upset and accident conditions to occur. In addition,

these plans define procedures to be used to respond to accidental releases of hazardous materials into the environment. The HMBP would define an emergency response plan, include requirements for monitoring hazardous materials storage locations to ensure that any accidental release are identified and addressed in a timely manner. The SPCC Plan would address the methods used to prevent and control releases, and methods to be used to clean-up and dispose of recovered materials.

Implementation of Mitigation Measure HAZ-1 would be required under Alternatives 1, 2, or 3. Mitigation Measure HAZ-1 requires the Applicant to prepare and implement a site-specific Hazardous Materials Management and Emergency Response Plan, which would minimize potential exposures to existing hazardous materials if such materials are found to be present on site. If the Applicant chooses to use CdTe PV panels or panels containing another potentially toxic semiconductor material, implementation of Mitigation Measure HAZ-2, which requires the Applicant to prepare and implement a Broken PV Module Detection and Handling Plan, would minimize the potential for semiconductor leaching from damaged panels.

Compliance with existing regulations would reduce the potential for releases, but would not completely avoid hazards to construction workers, the public, and the environment. Although the Applicant proposes to refuel construction equipment at least 100 feet from any water body, water well or wetland, soil and groundwater contamination could still result from releases from fuel tanks on mobile fuel trucks or equipment, or as a result of the refueling process. Mitigation Measure WATER-1 would require that all refueling and maintenance would occur at a designated area, within secondary containment with a volume sufficient to contain the largest fuel tank. In addition to the spill response and reporting requirements of the HMBP, SPCC, and SWPPP, Mitigation Measure WATER-1 would require the Applicant to notify BLM within 24 hours of any release outside of containment. Mitigation Measure WATER-1 would require periodic sampling and analysis of groundwater to verify that Project construction, operations, and decommissioning do not release contamination.

Because of the relatively low volumes of hazardous materials and fuels onsite at any time, requirements for immediate response to releases, and flat topography that limits site runoff, it is unlikely that any accidental releases would extend beyond the boundaries of the Project area before they are identified and addressed. The closest residence (apparent occupied mobile home trailer) is located approximately 3,700 feet north of the northeast corner of the Proposed Action boundary. The next two closest sensitive air quality receptors are located in the residential community of Nicholls Warm Springs/Mesa Verde approximately 4,800 feet north of the northeast corner of the Proposed Action boundary. Although members of the public could potentially be present outside the Proposed Action area fence, there are no adjacent land uses or local residents which would result in the presence of large number of people who could be impacted by a release of hazardous materials.

With implementation of Mitigation Measures HAZ-1, HAZ-2, and WATER-1, impacts associated with the accidental release of hazardous materials during construction, operation, and decommissioning of Alternatives 1, 2, or 3 would be reduced to less than significant levels.

HAZ-3) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Alternatives 1, 2, or 3 would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No impacts would occur.

HAZ-4) Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?

The Applicant's Phase I Environmental Site Assessment included a search for environmentally affected sites and other sites that are within a one-mile radius surrounding the proposed Project area, which includes the sites for Alternatives 2 and 3. The report (URS 2015) includes descriptions of each agency database, site names and addresses, and status, with some repetition existing among the different databases. There were no hazardous sites identified within the Project site, nor within the one-mile search radius of the Project site. Therefore, there would be no impact.

HAZ-5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the project area?

Construction of a portion of the proposed Project would occur within the Blythe Airport Compatibility Zone E. Construction of the proposed Project would include the use of cranes to install gen-tie support poles up to 135 feet in height along a length of 2.79 miles of transmission line outside of Zone E, but within 20,000 feet of a runway. Construction of a portion of Alternatives 2 and 3 would occur within the Blythe Airport Compatibility Zone E, including a segment of the gen-tie line 1.08 miles long. Construction of Alternative 2 would include the use of cranes to install gen-tie support poles up to 135 feet in height along a length of 2.81 miles of transmission line outside of Zone E, and 1.08 miles within Zone E. Construction of Alternative 3 would include the use of cranes to install gen-tie support poles up to 135 feet in height along a length of 3.1 miles of transmission line outside of Zone E, and 1.08 miles within Zone E.

During pole installation for Alternatives 1, 2, or 3, the total height of the cranes would extend higher than the proposed towers. In such a situation, a separate notice to the FAA is required. The FAA would consider the proposed construction method, including use of cranes, in its safety assessment. With implementation of Mitigation Measure HAZ-3, which requires that the Applicant receive a "Determination of No Hazard to Air Navigation" in order to proceed, impacts would be less than significant.

HAZ-6) For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the project area?

Alternatives 1, 2, or 3 would not be within the vicinity of a private airstrip; therefore, no impact would occur.

HAZ-7) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Alternatives 1, 2, or 3 would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; therefore, no impact would occur.

HAZ-8) Would the Project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Alternatives 1, 2, or 3 would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires; therefore, no impact would occur.

HAZ-9) Would the Project result in an inconsistency with an Airport Master Plan?

The RCALUC reviewed the Project, and made a determination on November 6, 2015 that the Project is consistent with the RCALUCP. Impacts would be less than significant.

The RCALUC reviewed Alternative 2 and Alternative 3, and made a determination on October 21, 2016 that both are consistent with the RCALUCP. Impacts would be less than significant.

HAZ-10) Would the Project require review by the Airport Land Use Commission?

The RCALUC reviewed the Project, and made a determination on November 6, 2015, that the Project is consistent with the RCALUCP. Impacts would be less than significant.

The RCALUC reviewed Alternative 2 and Alternative 3, and made a determination on October 21, 2016 that both are consistent with the RCALUCP. Impacts would be less than significant.

4.9.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.9 would be maintained. No hazardous materials would be brought to the Project area, no disturbance of site soils would occur, and no gen-tie line would be constructed, and therefore Alternative 4 would not result in any impacts associated with hazards or hazardous materials.

4.9.6 Cumulative Impacts

The geographic scope considered for cumulative impacts associated with hazardous materials, emergency response, environmental site contamination, and public health is the area within a one mile of the boundary of the Project. One mile is the standard search distance for hazardous materials in a Phase I Environmental Site Assessment, and also includes all areas within which a receptor might be expected to experience impacts from a release of hazardous materials from the Project. The geographic scope for cumulative effects related to aviation safety is the Blythe

Airport Influence Area. The temporal scope of hazardous materials and aviation safety impacts would occur throughout the life of the Project, but would cease following Project decommissioning. Although transmission lines could accommodate power from other nearby electricity generation projects following decommissioning, such use is speculative, and not associated with any reasonably foreseeable future project.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

As discussed in Section 4.9.3.1, the potential for the Proposed Action to release hazardous materials which would present a risk to workers or the public is low. The APMs discussed in Section 4.9.2, including implementation of the Preliminary Hazardous Materials Management and Emergency Response Plan, HMBP, SWPPP, and SPCC Plans, and Mitigation Measures HAZ-1 and HAZ-2, would minimize the potential for a release of hazardous materials. The only past, present, and reasonably foreseeable future projects within one mile include the RE Crimson Solar Project, NRG Blythe PV Project, BMSP, and transmission lines within the corridors along the southwestern and northern boundaries of the Proposed Action area. These projects would each require an Environmental Site Assessment to identify site conditions before construction begins, and would each be subject to same agency regulations that address the handling and accidental release of hazardous materials. For the Proposed Action, implementation of Mitigation Measure WATER-2, which requires a comprehensive drainage, stormwater, and sedimentation control plan, would reduce the potential risk of mosquito breeding on or near the site, and therefore would reduce the risk for workers and the public of contracting vector-borne diseases. Similarly, implementation of Mitigation Measure AQ-1 would reduce fugitive dust during the construction phase, which would reduce the risk to workers of contracting valley fever. The past, present, and reasonably foreseeable future projects would be subject to similar agency regulations, APMs, and agency-required mitigation measures to reduce the potential for public health hazards. Therefore, each would also have a limited potential for releasing hazardous materials, and the contribution of the Project to cumulative impacts associated with hazardous materials would not be cumulatively considerable (impacts HAZ-1 through HAZ-4, and HAZ-8). None of the past, present, or reasonably foreseeable future projects within one mile are expected to have impacts to emergency response capabilities. During operations, transmission lines and solar power plant projects have limited numbers of workers and associated traffic. If there were overlapping construction periods for the DQSP, BMSP, RE Crimson Solar Project, and gen-tie lines for other projects, traffic levels could increase and potentially affect emergency response capability in limited local areas. However, concurrent construction of all of these projects is unlikely, given their different timeframes for environmental analysis and permitting. In addition, all of these projects are located in undeveloped, rural areas, and would not impact emergency response in populated areas at the Nichols Warm Springs/Mesa Verde community or in Blythe. Therefore, the incremental effects of the Proposed Action, when considered together with the effects of past, present, and reasonably foreseeable projects, would not create a cumulatively considerable impact to emergency response capability (impact HAZ-7).

Several of the current projects involve transmission lines constructed within the Blythe AIA. The Project would share Corridor K/30-52 with the gen-tie lines of other local solar projects, including the adjacent BMSP. Each individual power plant and transmission line must be

evaluated by the FAA for its potential impact to air navigation. For the BMSP, the FAA has issued "No Hazard to Air Navigation" Determinations for the 230 kV gen-tie line structures. In general, multiple parallel transmission lines at the same height and distance from the airport would not be expected to create a cumulative risk to aircraft safety that is greater than the risk posed by an individual transmission line. However, the BMSP towers would be 85 to 125 feet high, while the height of the proposed gen-tie line towers for the DQSP may be up to 135 feet in height. Therefore, it is unknown if the DQSP would receive a similar "No Hazard" determination, which would be required prior to construction of the Proposed Action. Mitigation Measure HAZ-3 requires that the Applicant receive a "Determination of No Hazard to Air Navigation" in order to proceed. The FAA "Determination of No Hazard to Air Navigation" must address the "Cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures" (USDOT 2013). The issuance of this determination for the DQSP would signify that no adverse cumulative impact would result from the Proposed Action in combination with other projects within the Blythe Airport Compatibility Area. With this determination required under Mitigation Measure HAZ-3, the Proposed Action would not incrementally contribute to any risk to aircraft safety (impacts HAZ-5, HAZ-6, HAZ-9, and HAZ-10).

With respect to intentionally destructive acts, potential cumulative impacts could occur if such acts on multiple facilities could release hazardous materials or result in power disruption. Individually, each of the past, present, and reasonably foreseeable future projects, including the DQSP, would contribute an incremental "low vulnerability" determination with respect to intentionally destructive acts, because each would have security measures in place and public access would be strictly controlled. Although possible, it seems unlikely that the targeting of multiple renewable energy facilities in the area could occur, and even less likely that it would result in a catastrophic event. Therefore, there is a low potential that the Proposed Action could combine with the individual threat levels of other past, present, or reasonably foreseeable future energy generation projects to create a cumulative impact.

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

As discussed in Section 4.9.3.2, the impacts of Alternative 2 with respect to hazardous materials and environmental site contamination, public health, emergency response, aircraft operations, and intentionally destructive acts are, in all cases, the same or slightly lower than that described for the Proposed Action. Alternative 2 would occupy a smaller land area, and would involve a reduced duration and level of effort required for construction and decommissioning. The regulatory requirements, APMs, and agency-imposed mitigation measures would be the same for Alternative 2 as for the Proposed Action. Therefore, the potential for Alternative 2 to contribute incrementally to cumulative impacts with respect to hazardous materials and environmental site contamination, public health, emergency response, and intentionally destructive acts would be approximately the same as those described for the Proposed Action.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

As discussed in Section 4.9.3.3, the impacts of Alternative 3 with respect to hazardous materials and environmental site contamination, public health, emergency response, aircraft operations, and intentionally destructive acts are, in all cases, the same or slightly lower than that described for the Proposed Action. Alternative 3 would occupy a smaller land area, and would involve a reduced duration and level of effort required for construction and decommissioning. The regulatory requirements, APMs, and agency-imposed mitigation measures would be the same for Alternative 3 as for the Proposed Action. Therefore, the potential for Alternative 3 to contribute incrementally to cumulative impacts with respect to hazardous materials and environmental site contamination, public health, emergency response, and intentionally destructive acts would be approximately the same as those described for the Proposed Action.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. Alternative 4 would not contribute to cumulative hazardous materials impacts.

4.9.7 Residual Impacts

Following implementation of Mitigation Measures HAZ-1, HAZ-2, HAZ-3, UXO-1, and TSLN-1, as well as AQ-1, AQ-2, and WATER-2, potential impacts related to hazards and hazardous materials would be avoided or substantially reduced. However, hazardous materials would always be present on the Project site, and although compliance with mitigation measures and existing regulations would reduce hazards, they would not completely avoid hazards to construction workers, the public, and the environment.

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4.10 Lands, Realty, and Agricultural and Forestry Resources

4.10.1 Methodology for Analysis

4.10.1.1 NEPA Requirements

Evaluation of potential land use impacts of the Proposed Action and Alternatives is based on review of the BLM Master Title Plats and Land & Mineral Legacy Rehost 2000 System (LR2000) to obtain information related to pending and authorized uses on the lands potentially affected by the Project and its ancillary facilities.

The assessment is based on impacts from the Project on rights-of-way and land use permits for the Project site and adjacent BLM lands. Potential land use conflicts are identified and evaluated based on existing land uses, land uses proposed as part of the Proposed Action and Alternatives, Federal land use designations established in the CDCA Plan and its amendments, and BLM standards and policies related to land use. Land use compatibility is based on the intensity and patterns of adjacent land use to determine whether the Project would result in incompatible uses or nuisances. Potential land use conflicts may result from environmental effects, such as generation of noise, dust, or heavy truck traffic.

The analysis of CDCA Plan Consistency presented in Appendix F is based on review of the Multiple-Use Class (MUC) Guidelines provided in Table 1 of the CDCA Plan. As discussed in Section 3.10.1.3, the DRECP established new land use designations which replace the MUCs that are currently in effect under the CDCA Plan. In the DRECP, the Project site has been designated as a Development Focus Area (DFA), which is an area where activities associated with solar, wind, and geothermal energy are allowed, streamlined, and incentivized. Because the application is not subject to the terms of the DRECP, the multiple-use class designations of the CDCA Plan are still applicable. Another reason that the analysis of the Project in this PA/EIS/EIR is not based on the DRECP is that it is based on the land use designations and visual resource classifications that were in effect on March 6, 2015, the date of the NOI. DRECP's designations and classifications were not issued until 18 months later. Therefore, this analysis was prepared by reviewing the applicable CDCA Plan requirements and concepts (including multiple-use, sustained yield, and maintenance of environmental quality) for MUC-M land, and evaluating the Project to determine whether it would be consistent with them. A discussion of the differences between the CDCA Plan and the DRECP land use allocations, and their effect on the analysis of the Project in this PA/EIS/EIR, is presented in Appendix E.

Appendix B of the ROD for the Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States (BLM 2009) specifies IOPs to meet the Section 368 requirement to improve the ROW application process and to meet NEPA requirements to provide practicable means to avoid or minimize environmental harm which may result from future ROW grants within the designated corridors. The IOPs specify regulatory compliance, agency coordination, government-to-government consultation, project design, and resource-specific considerations that must be addressed through NEPA analysis of the proposed use of the corridor. The manner in which the Project and the PA/EIS/EIR conforms to the IOPs is presented in Appendix F, Table F-1.

The privately owned parcel under Riverside County jurisdiction is designated as Open Space-Rural in the Riverside County General Plan (Riverside County 2015a). The policies that are

relevant to the Project are presented within the discussion of each resource throughout Chapter 3. The conformance of the Project with these policies is evaluated through Chapter 4, and is summarized in Appendix F, Table F-2.

4.10.1.2 CEQA Significance Criteria

The criteria listed below were used to determine if the proposed Project would result in impacts to land use. These criteria were obtained from the CEQA Environmental Checklist, Appendix G of the state CEQA Guidelines for Land Use and Planning. Under CEQA, the proposed Project and alternatives would have a significant impact on land use if they would:

LU-1) Physically divide an established community.

LU-2) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

LU-3) Conflict with any applicable habitat conservation plan or natural community conservation plan.

The following additional significance criteria from the County of Riverside CEQA Environmental Assessment form are used in the analysis. A project could have potentially significant impacts if it would:

LU-4) Result in a substantial alteration of the present or planned land use of an area.

LU-5) Affect land use within a city sphere of influence and/or within adjacent city or county boundaries.

LU-6) Be inconsistent with the site's existing or proposed zoning.

LU-7) Be incompatible with existing surrounding zoning.

LU-8) Disrupt or divide the physical arrangement of an established community (including a low income or minority community).

This section also evaluates impacts related to agricultural and forestry resources. These criteria were obtained from the CEQA Environmental Checklist, Appendix G of the state CEQA Guidelines for Agriculture and Forest Resources. Under CEQA, the proposed Project and alternatives would have a significant impact on agriculture or forestry resources if they would:

AG-1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the map prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

AG-2) Conflict with existing zoning for agricultural use, or a Williamson Act contract.

AG-3) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).

AG-4) Result in the loss of forest land or conversion of forest land to non-forest use.

AG-5) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

The following additional significance criteria from the County of Riverside CEQA Environmental Assessment Form are also used in the analysis. A project could have potentially significant impacts if it would:

AG-6) Conflict with land within a Riverside County Agricultural Preserve.

AG-7) Cause development of non-agricultural uses within 300 feet of agriculturally zoned property (Ordinance No. 625, "Right-to-Farm").

4.10.2 Applicant-Proposed Measures

There are no APMs proposed to address potential effects to lands and realty.

4.10.3 Direct and Indirect Impacts

4.10.3.1 Alternative 1: Proposed Action

This impact assessment is based on known impacts from construction, operation, maintenance, and decommissioning on ROWs and land use permits of all types on BLM-administered land. Potential land use conflicts are identified and evaluated based on existing land uses, land uses proposed as part of the Proposed Action, Federal land use designations established in the CDCA Plan, and BLM land use-related standards and policies. Land use compatibility is based on the intensity and patterns of land use to determine whether the Proposed Action would result in incompatible uses or nuisances.

Occupation of Land Area

The acreage that would be occupied by the Proposed Action is presented in Table 2-4. The Proposed Action would occupy 3,616 acres of BLM public land, and 154 acres of private land. As the Project site is undeveloped, the only land use expected to be disrupted would be dispersed recreation and OHV use, which are discussed in Section 4.14, *Recreation and Public Access*. BLM would retain the right to issue other compatible ROWs within the boundary of the DQSP ROW. The Proposed Action would also temporarily occupy 61 acres of BLM public land for construction. Following construction, this land area would again become available for other land uses.

Impacts to Land Use Plans

The Applicant has requested a ROW grant (Application CACA-049397) from the BLM for approximately 5,115 acres of public land. The Proposed Action site is within the BLM's California Desert District and within the planning boundaries of the CDCA Plan. As discussed in Section 2.2.3, the Final Western Solar Plan recognizes the DQSP as a "pending" ROW application (Western Solar Plan §9.4.22.2, p. 9.4-133). Pending applications like the DQSP are not subject to the Western Solar Plan (Western Solar Plan ROD Section B.1.2) or to the CDCA Plan amendments made in that decision. Therefore, if the BLM elects to approve the ROW grant application for the DQSP, a Project-specific CDCA Plan Amendment (PA) to identify the development footprint as suitable for the proposed type of solar energy use would be required.

The CDCA Plan would also need to be amended to authorize the portion of the gen-tie corridor which is located outside of BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52.

An evaluation of the conformance of the Project with the specific elements of the CDCA Plan is presented in Appendix F. No changes in the MUC-M classification would be required prior to approving the ROW grant, and as discussed in the consistency analysis in Appendix F, the land use activities associated with the Proposed Action would be consistent with MUC Guidelines.

A portion of the Proposed Action would also be constructed on approximately 154 acres of private land under the land use authority of Riverside County. The compliance of the Project with the Riverside County General Plan (Riverside County 2015a), Palo Verde Valley Area Plan (Riverside County 2015b), and Riverside County Zoning Ordinance is discussed in Appendix F and Table F-2. With approval of the conditional use permit by the Riverside County Board of Supervisors, a solar power plant on a lot 10 acres or larger would be a permitted use on private land that is zoned W-2-10.

Impacts to Designated Corridors

As shown in Figure 3.10-2, the proposed ROW overlies portions of Utility Corridor J and Corridor K/30-52. Use of the land within either corridor for the gen-tie line, solar arrays, or for other uses could impact current uses of the corridors, as well as limit future uses of the corridors for other projects.

The gen-tie line for the Proposed Action would be sited almost entirely within utility Corridor K/30-52. As discussed in Appendix D, Section D.10.1, Appendix B of the Resource Management Plan Amendments/Record of Decision (ROD) for Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States (BLM 2009) specifies Interagency Operating Procedures (IOPs) to meet the Section 368 requirement to improve the ROW application process and to meet NEPA requirements to provide practicable means to avoid or minimize environmental harm which may result from future ROW grants within the designated corridors. An evaluation of the conformance of the Project with the IOPs is presented in Appendix F, Table F-1.

With respect to the use of the corridor by the gen-tie line, the majority of the line and the new access road would parallel other approved transmission lines already present or approved within the corridor. Only at the entrance to the CRSS would the gen-tie line need to cross other existing transmission lines. The Applicant has coordinated with the operators of other transmission lines in the corridor to minimize conflicts, and the Proposed Action gen-tie line would be collocated with other transmission lines to the extent feasible. Project components would be consistent with the requirements of CPUC General Order No. 95 regarding the configurations of utility lines in shared ROWs. Construction and operation of these new linear facilities using industry SOPs and BMPs for crossing over existing authorized uses would effectively mitigate potential negative impacts to existing authorized users. Although there are other ROWs currently authorized within Corridor K/30-52, several thousand feet of width would remain within the corridors to accommodate the gen-tie line, leaving sufficient space to accommodate anticipated near-future needs. However, the use of the energy transmission corridor by a gen-tie line would have an impact on siting of energy transmission within the corridor, for if constructed, the physical space occupied by the gen-tie would likely preclude siting of transmission in that same space.

In addition to the gen-tie line, underground, hard-wired fiber-optic cable would partially run perpendicular to Corridor K/30-52 to connect the site to existing communications cables, located approximately one mile to the north. With modern technology, impacts from the perpendicular cable and power lines would be expected to be minimal, easily mitigated and would not preclude continued and future use of either designated corridor. As noted above, future use would be slightly constrained by placement of additional facilities within the corridors.

Any existing authorization that would be affected by the Proposed Action has "priority rights" in the sense that any new authorization(s) would be issued "subject to" the previously granted rights of the existing ROW holders. Therefore, the Applicant would be required to mitigate any potential impact to the existing users at the Applicant's expense. This would mean bearing all costs for relocating or modifying any facilities such as power poles or conductors that might be necessary to accommodate the new use. This priority right attaches when a ROW is granted; subsequent grants of ROW would be issued subject to the rights of prior grants. Here, if and after the proposed ROW is granted for the Proposed Action, subsequent applicants would have to mitigate any impact of their proposals to the Project.

As shown in Figure 3.10-2, the solar arrays associated with the Proposed Action would not conflict with any current uses within Corridors J or K/30-52. However, future uses within Corridor J could be impacted, because the Proposed Action solar arrays would overlie portions of the corridor. The width of Corridor J in this area is approximately 11,500 feet, and the solar arrays of the Proposed Action would occupy approximately 5,500 feet (48 percent) of this width.

As discussed in Section 2.2.3, the Proposed Action gen-tie line would be sited almost entirely within utility Corridor K/30-52. Because the CRSS is sited approximately 1,500 feet south of the southern boundary of Corridor K/30-52, the portion of the gen-tie corridor between the corridor and the CRSS would be located outside of the corridor, and would require consideration through the CDCA Plan Amendment process. Therefore, if the BLM elects to approve the ROW grant application for the Proposed Action, a Project-specific PA would be required.

4.10.3.2 Alternative 2: Resource Avoidance Alternative

In general, the types of land use impacts that would occur as a result of Alternative 2 are the same as those which would occur under the Proposed Action. The acreage that would be occupied by Alternative 2 is presented in Table 2-5. Alternative 2 would occupy 2,622 acres of BLM public land, and 160 acres of private land. Alternative 2 would also temporarily occupy 63.6 acres of BLM public land for construction. Following construction, this land area would again become available for other land uses. As with the Proposed Action, the only land use expected to be disrupted would be dispersed recreation and OHV use. BLM would retain the right to issue other compatible ROWs within the boundary of the DQSP ROW.

The relationship of the Alternative 2 site to applicable land use plans is the same as described for the Proposed Action. The entire BLM land area is classified as MUC-M, and a Project-specific PA to identify the development footprint as suitable for the proposed type of solar energy use would be required. The CDCA Plan would also need to be amended to authorize the portion of the gen-tie corridor which is located outside of BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52. The use of the private land would be approximately the same under the Proposed Action and Alternative 2. With approval of the conditional use permit by the

Riverside County Board of Supervisors, a solar power plant on a lot 10 acres or larger would be a permitted use on private land that is zoned W-2-10.

The ROW associated with Alternative 2 would overly portions of both Utility Corridor J and Corridor K/30-52, similar to the Proposed Action. The use of Corridor K/30-52 for the gen-tie line and new access road would be the same as for the Proposed Action. The gen-tie line would be collocated with other transmission lines to the extent feasible. Project components would be consistent with the requirements of CPUC General Order No. 95 regarding the configurations of utility lines in shared ROWs. Construction and operation of these new linear facilities using industry SOPs and BMPs for crossing over existing authorized uses would effectively mitigate potential negative impacts to existing authorized users. Several thousand feet of width would remain within the corridors to accommodate the gen-tie line, leaving sufficient space to accommodate anticipated future needs.

As with the Proposed Action, the solar arrays associated with Alternative 2 could impact future uses within Corridor J, because they would overlie portions of the corridor. The width of Corridor J in this area is approximately 11,500 feet, and the solar arrays of Alternative 2 would occupy approximately 5,219 feet (45 percent) of this width.

The gen-tie line for Alternative 2 would be sited almost entirely within utility Corridor K/30-52 but, like the Proposed Action, would include segments located outside of the corridor. Because the CRSS is sited approximately 1,500 feet south of the southern boundary of Corridor K/30-52, the portion of the gen-tie corridor between the corridor and the CRSS would be located outside of the corridor, and would require consideration through the CDCA Plan Amendment process. In addition, a short segment of the gen-tie line extending north from the On-Site Substation to the corridor would be located outside of the corridor. Therefore, if the BLM elects to approve the ROW grant application for Alternative 2, a Project-specific PA would be required.

4.10.3.3 Alternative 3: Reduced Project Alternative

In general, the types of land use impacts that would occur as a result of Alternative 3 are the same as those which would occur under the Proposed Action. The acreage that would be occupied by Alternative 3 is presented in Table 2-6. Alternative 3 would occupy 1,887 acres of BLM public land, and 160 acres of private land. Alternative 3 would also temporarily occupy 65 acres of BLM public land for construction. Following construction, this land area would again become available for other land uses. As with the Proposed Action, the only land use expected to be disrupted would be dispersed recreation and OHV use. BLM would retain the right to issue other compatible ROWs within the boundary of the DQSP ROW.

The relationship of the Alternative 3 site to applicable land use plans is the same as described for the Proposed Action. The entire BLM land area is classified as MUC-M, and a Project-specific PA to identify the development footprint as suitable for the proposed type of solar energy use would be required. The CDCA Plan would also need to be amended to authorize the portion of the gen-tie corridor which is located outside of BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52. The use of the private land would be approximately the same under the Proposed Action and Alternative 3. With approval of the conditional use permit by the Riverside County Board of Supervisors, a solar power plant on a lot 10 acres or larger would be a permitted use on private land that is zoned W-2-10.

The ROW associated with Alternative 3 would overly portions of both Utility Corridor J and Corridor K/30-52, similar to the Proposed Action. The use of Corridor K/30-52 for the gen-tie line and new access road would be the same as for the Proposed Action. The gen-tie line would be collocated with other transmission lines to the extent feasible. Project components would be consistent with the requirements of CPUC General Order No. 95 regarding the configurations of utility lines in shared ROWs. Construction and operation of these new linear facilities using industry SOPs and BMPs for crossing over existing authorized uses would effectively mitigate potential negative impacts to existing authorized users. Several thousand feet of width would remain within the corridors to accommodate the gen-tie line, leaving sufficient space to accommodate anticipated future needs.

As with the Proposed Action, the solar arrays associated with Alternative 3 could impact future uses within Corridor J, because they would overlie portions of the corridor. The width of Corridor J in this area is approximately 11,500 feet, and the solar arrays of Alternative 3 would occupy approximately 5,219 feet (45 percent) of this width.

The gen-tie line for Alternative 3 would be sited almost entirely within utility Corridor K/30-52 but, like the Proposed Action, would include segments located outside of the corridor. Because the CRSS is sited approximately 1,500 feet south of the southern boundary of Corridor K/30-52, the portion of the gen-tie corridor between the corridor and the CRSS would be located outside of the corridor, and would require consideration through the CDCA Plan Amendment process. In addition, a short segment of the gen-tie line extending north from the On-Site Substation to the corridor would be located outside of the corridor. Therefore, if the BLM elects to approve the ROW grant application for Alternative 3, a Project-specific PA would be required.

4.10.4 Application of CEQA Significance Thresholds

The proposed Project area does not include any designated farmlands or forest lands and therefore would not convert these uses to non-agricultural or non-forest land uses. The proposed Project would be consistent with current zoning and applicable land use plans. Therefore, impacts would be less than significant during construction, operation, maintenance, and decommissioning.

LU-1) Would the Project physically divide an established community?

Alternatives 1, 2, or 3 would not physically divide an established community. The Alternative 1, 2, and 3 areas would each be southwest of an existing community (Nicholls Warm Springs/Mesa Verde) and no part of Alternatives 1, 2, or 3 would be located through an established community. No impacts would occur.

LU-2) Would the Project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

The private land portion of Alternatives 1, 2, or 3 would be subject to the RCGP and PVVAP. The BLM portion of Alternatives 1, 2, or 3 would be subject to the CDCA Plan and its amendments. An evaluation of the conformance of the Project with the specific elements of the

CDCA Plan is presented in Appendix F, and the compliance of the Project with the Riverside County General Plan (Riverside County 2015a), Palo Verde Valley Area Plan (Riverside County 2015b), and Riverside County Zoning Ordinance is discussed in Appendix F and Table F-2.

With approval of the conditional use permit by the Riverside County Board of Supervisors, a solar power plant on a lot 10 acres or larger would be a permitted use on private land that is zoned W-2-10.

The Alternative 1, Alternative 2, or Alternative 3 gen-tie line would be sited almost entirely within BLM's Utility Corridor K/30-52. Because the CRSS is sited approximately 1,500 feet south of the southern boundary of Corridor K/30-52, the portion of the gen-tie corridor between Corridor K/30-52 and the CRSS would be located outside of the utility corridor, and would require consideration through the CDCA Plan Amendment process. In addition, for Alternative 2 or Alternative 3, a short segment of the gen-tie line extending north from the On-Site Substation to the corridor would be located outside of the corridor. The CDCA Plan would also be amended to identify the development footprint as suitable for the proposed type of solar energy use. Impacts would be considered less than significant.

LU-3) Would the Project conflict with any applicable habitat conservation plan or natural community conservation plan?

As discussed in Sections 4.3, *Biological Resources - Vegetation* and 4.4, *Biological Resources - Wildlife*, Alternatives 1, 2, or 3 would not be within the jurisdiction of any adopted habitat conservation plan or natural community conservation plan; therefore, no impacts would occur.

LU-4) Would the Project result in a substantial alteration of the present or planned land use of an area?

Alternatives 1, 2, and 3 would be partially located on private lands that would be conditionally consistent (with approval of the conditional use permit) with the RCGP and the PVVAP. The gen-tie line and remaining solar facilities would be located on BLM-managed lands within the Riverside East SEZ and thus would be consistent with the CDCA Plan and NECO Plan Amendment to the CDCA Plan, though a land use plan amendment would be required for part of the gen-tie line (near the CRSS) because it would be located outside of Corridor K/30-52. Alternatives 1, 2, and 3 would also require a CDCA Plan amendment to identify the development footprint as suitable for the proposed type of solar energy use, consistent with provisions already included in the CDCA Plan. Therefore, Alternatives 1, 2, and 3 would be consistent with present or planned land use of the area; impacts would be less than significant.

LU-5) Would the Project affect land use within a city sphere of influence and/or within adjacent city or county boundaries?

Alternatives 1, 2, and 3 are located outside of the City of Blythe's boundary and outside the City of Blythe's Sphere of Influence. Therefore, no impacts would occur to land uses within Blythe or the City's sphere of influence.

LU-6) Would the Project be inconsistent with the site's existing or proposed zoning?

As described for LU-2, Alternatives 1, 2, and 3 would be conditionally consistent with the existing zoning designation (W-2-10) for the privately-owned 160 acre inholding within the Project area with the approval of the conditional use permit. The gen-tie line and solar facilities located on BLM lands would be consistent with the CDCA Plan and NECO Plan Amendment to the CDCA Plan as described in LU-4. Alternatives 1, 2, or 3 would not require a zone change or general plan amendment. Therefore, the proposed Project would be consistent with the site's existing zoning. No impacts would occur.

LU-7) Would the Project be incompatible with existing surrounding zoning?

The zoning surrounding the Alternatives 1, 2, and 3 areas is similar to that of those areas (private property is zoned W-2-10). Therefore, Alternatives 1, 2, and 3 would each be compatible with existing surrounding zoning. No impacts would occur.

LU-8) Would the Project disrupt or divide the physical arrangement of an established community (including a low-income or minority community)?

Alternatives 1, 2, or 3 would not be located through an established community (see LU-1). No impacts would occur.

AG-1) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the map prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

As stated in Section 3.10, there are no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance lands within the Alternative 1, 2, or 3 areas (California Department of Conservation 2014). The 160-acre private property inholding within the Project area was formerly used to grow jojoba, but is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. None of the BLM lands are identified as Prime, Unique, or Farmland of Statewide Importance. No impacts would occur.

AG-2) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

As stated in Section 3.10, there are no Williamson Act contracts on lands within or adjacent to the Alternative 1, 2, or 3 areas (California Department of Conservation 2012). The privately-owned inholding within the proposed Project area is currently zoned Controlled Development Areas (W-2-10) (10-acre minimum) (Riverside County 2015b). Within the zoning ordinance under e. Public Utilities Uses, (2) Structures and the pertinent facilities necessary and incidental to the development and transmission of electrical power and gas such as hydroelectric power plants, booster or conversion plants, transmission lines, pipe lines and the like are allowed within the W-2 zone with issuance of the conditional use permit. Therefore, Alternatives 1, 2, and 3 would not conflict with existing zoning or a Williamson Act contract. No impacts would occur.

AG-3) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public

Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

As described in Section 3.10, there are no forest lands, timberland or timberland zoned Timberland Production within the Alternative 1, 2, or 3 areas. Therefore no impacts would occur.

AG-4) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

As described in Section 3.10, there are no forest lands within the Alternative 1, 2, or 3 areas. Therefore no impacts would occur.

AG-5) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

As described in Section 3.10, there are no forest lands within the Alternative 1, 2, or 3 areas. Thus there would be no conversion of forest land to non-forest use. Though the 160-acre private property inholding was formerly used to grow jojoba, the property is not currently used for agriculture. Therefore, use of the property for Alternatives 1, 2, or 3 would not result in the conversion of farmland to non-agricultural use. No impacts would occur.

AG-6) Would the project conflict with land within a Riverside County Agricultural Preserve?

Alternatives 1, 2, and 3 are not located within a Riverside County Agricultural Preserve. Therefore no impacts would occur.

AG-7) Would the project cause development of non-agricultural uses within 300 feet of agriculturally zoned property (Ordinance No. 625, "Right-to-Farm")?

Alternatives 1, 2, and 3 would be allowed as a conditional use on County lands zoned for Controlled Development Areas. As explained earlier, the proposed Project would not create use conflicts with agricultural use or otherwise interfere with use of agricultural-zoned property adjacent to the Alternative 1, 2, or 3 areas. The impact would be less than significant.

4.10.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.10 would be maintained. Existing land uses would continue uninterrupted, and there would be no impact on future land uses. Therefore Alternative 4 would not result in any land use impacts.

4.10.6 Cumulative Impacts

The geographic scope of the cumulative effects analysis for lands and realty includes other MUC-M land in eastern Riverside County, the Project site and the location of ancillary facilities, adjacent land uses, and the designated utility corridors. Potential cumulative effects on lands and realty could occur during the Project's proposed 46-month construction period, 30-year projected lifespan, and decommissioning and closure period, as well as during the lifespan of other projects whose features may be located based on constraints imposed by implementation of the Project.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

Implementation of the Proposed Action and other past, present, and reasonably foreseeable future projects would potentially preclude the development of other uses on the Project site and could, thereby, affect the type of land use opportunities on lands within the CDCA Plan area.

The effects of past actions on MUC-M land are reflected in the discussion of each resource in Chapter 3. Effects of the Proposed Action on MUC-M lands relate to the opportunity cost of implementing the Project. If the Project or an alternative is developed on the site, the site cannot be used for other MUC-M use opportunities that otherwise would be available. Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 4.1.5. Among them, projects that also would be developed wholly or partially on lands designated as MUC-M would similarly restrict recreational opportunities within that classification for the duration of those projects. These projects include Palen Solar, Genesis Solar, Desert Sunlight, Desert Harvest, and RE Crimson. The Proposed Action would occupy approximately 3,616 acres, and the other MUC-M projects would occupy approximately 25,000 acres, for a total of approximately 28,600 acres. Of the total MUC-M lands in eastern Riverside County, the Proposed Action represents less than 1 percent, with a total cumulative effect of approximately 8 percent. Since more than 350,000 acres of MUC-M lands in eastern Riverside County would remain available for other uses; other classes of lands can also support some of the same uses MUC-M lands allow; and upon completion of decommissioning these lands would be available for other uses, no cumulative impact would result from the contribution of the Proposed Action to the impact of the past, present, and reasonably foreseeable future projects.

The Proposed Action would be one of three projects which propose transmission lines within Corridor K/30-52, connecting to the CRSS. The MSEP and BMSP would also have gen-tie lines within this corridor. The Applicant has coordinated with the operators of other transmission lines in the corridor to minimize conflicts, and the Proposed Action gen-tie line would be collocated with other transmission lines to the extent feasible. Project components would be consistent with the requirements of CPUC General Order No. 95 regarding the configurations of utility lines in shared ROWs. Construction and operation of these new linear facilities using industry SOPs and BMPs for crossing over existing authorized uses would effectively mitigate potential negative impacts to existing authorized users.

The Project would not physically divide an established community (impact LU-1 and LU-8), and would not conflict with any applicable land use plan or habitat conservation plan (impact LU-2 and LU-3), so would not contribute to these cumulative impacts. Both the BLM and private land portions of the Project would be consistent with present or planned land use and zoning of the area, so would not contribute to cumulative impacts associated with land use (impact LU-4, LU-

6, and LU-7). The Project is not located within a city sphere of influence and/or within adjacent city or county boundaries (impact LU-5). The Project would not contribute to the conversion of farmlands to a non-agricultural use (impact AG-1), and would not conflict with a Williamson Act contract (impact AG-2). The Project would not conflict with zoning for, or cause rezoning of, forest land (impact AG-3), and would not result in the loss of forest land or conversion of forest land to non-forest use (impact AG-4). The Project would not involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non- forest use; conflict with land within the Riverside County Agricultural Preserve; or cause development of non-agricultural uses within 300 feet of agriculturally zoned property (impacts AG-5, AG-6, and AG-7).

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 2 to cumulative land use impacts would be approximately the same as the Proposed Action. Alternative 2 would occupy approximately 2,622 acres, and the other MUC-M projects would occupy approximately 25,000 acres, for a total of approximately 27,622 acres. Of the total MUC-M lands in eastern Riverside County, the Alternative 2 represents less than 1 percent, with a total cumulative effect of approximately 8 percent. Since more than 350,000 acres of MUC-M lands in eastern Riverside County would remain available for other uses; other classes of lands can also support some of the same uses MUC-M lands allow; and upon completion of decommissioning these lands would be available for other uses, no significant cumulative impact would result from the contribution of Alternative 2 to the impact of the past, present, and reasonably foreseeable future projects. The location of the gen-tie line within Corridor K/30-52 would be approximately the same under Alternative 2 as the Proposed Action, and would therefore have a similar contribution to cumulative impacts to land uses within this corridor.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 3 to cumulative land use impacts would be approximately the same as the Proposed Action. Alternative 3 would occupy approximately 1,887 acres, and the other MUC-M projects would occupy approximately 25,000 acres, for a total of approximately 26,887 acres. Of the total MUC-M lands in eastern Riverside County, the Alternative 3 represents less than 1 percent, with a total cumulative effect of approximately 8 percent. Since more than 350,000 acres of MUC-M lands in eastern Riverside County would remain available for other uses; other classes of lands can also support some of the same uses MUC-M lands allow; and upon completion of decommissioning these lands would be available for other uses, no significant cumulative impact would result from the contribution of Alternative 3 to the impact of the past, present, and reasonably foreseeable future projects. The location of the gen-tie line within Corridor K/30-52 would be approximately the same under Alternative 3 as the Proposed Action, and would therefore have a similar contribution to cumulative impacts to land uses within this corridor.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. There would be no use of land area within MUC-M or designated utility corridors, and therefore no contribution to cumulative land use impacts.

4.10.7 Residual Impacts

Because no mitigation measures are recommended, impacts to lands and realty would be the same as discussed for the Proposed Action.

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4.11 Mineral Resources

4.11.1 Methodology for Analysis

The impacts of the Project on mineral resources were assessed by evaluating whether the Project would reduce the availability of mineral resources, or interfere with access to mineral resources, region. Information on the type and extent of mineral resources present in the region was described in Section 3.11, *Mineral Resources*, using applicable geologic maps and mineral resource databases. Construction, operation, maintenance, and decommissioning activities for the Project are analyzed in terms of their direct and indirect effects on existing mineral leases and claims, and the future availability of or access to areas containing mineral resources.

4.11.1.1 CEQA Significance Criteria

The criteria used to determine the significance of potential impacts to mineral resources are based on Appendix G of the state CEQA Guidelines. The Project would result in a significant impact under CEQA related to mineral resources if it would:

MR-1) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

MR-2) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

The following additional significance criteria from the County of Riverside CEQA Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

MR-3) Be an incompatible land use located adjacent to a state classified or designated area or existing surface mine.

MR-4) Expose people or property to hazards from proposed, existing or abandoned quarries or mines.

4.11.2 Applicant-Proposed Measures

There are no APMs to address potential effects to mineral resources.

4.11.3 Direct and Indirect Impacts

4.11.3.1 Alternative 1: Proposed Action

Construction, Operations, and Decommissioning

As discussed in Section 3.11, *Mineral Resources*, the Project site is not currently used for mineral production, nor is it under claim, lease, or permit for the production of locatable, leasable, or salable minerals or mineral materials. In addition, the Riverside East SEZ was withdrawn from location and entry under the United States mining laws, subject to valid existing rights, for a period of 20 years, under Public Land Order No. 7818. The lands remain open to mineral and geothermal leasing, and mineral material sales.

During construction, operation, maintenance, and decommissioning of the Project, approximately 3,616 acres of land may be unavailable for mineral and geothermal leasing, and mineral material sales. This would not directly impact the current production of locatable or leasable minerals because none are known on the Project site. However, the Project site is underlain by sand and gravel, which potentially could represent a source of saleable minerals or mineral materials if there is a sufficient local demand for construction aggregate.

Indirect impacts could occur if the Project were to block access routes to any off-site mineral resource areas. As discussed in Section 4.14, *Recreation and Public Access*, and Section 4.17, *Transportation and Traffic*, the Project would not block or otherwise impair access to any major public roadway. While the Project would result in closing some open routes, other open routes in close proximity to the Project site could be used to access the same areas. The presence of the Project would not prevent permitted prospectors or owners of mineral leases in the surrounding region from accessing areas outside the footprint of the Project because there are other routes available to access the surrounding mountains.

4.11.3.2 Alternative 2: Resource Avoidance Alternative

Alternative 2 would cause the same types of impacts to mineral resources as the Proposed Action. Because the Project area would be smaller for Alternative 2 than for the Proposed Action, the construction, operation, maintenance, and decommissioning activities associated with Alternative 2 would affect and occupy a smaller area and, thereby, result in a reduced acreage removed from potential mineral production for the duration of the Project.

4.11.3.3 Alternative 3: Reduced Project Alternative

Alternative 3 would cause the same types of impacts to mineral resources as Alternatives 1 and 2. Because the Project area would be smaller for Alternative 3 than for either Alternatives 1 or 2, the construction, operation, maintenance, and decommissioning activities associated with Alternative 3 would affect and occupy a smaller area and, thereby, result in a reduced acreage removed from potential mineral production for the duration of the Project.

4.11.4 Application of CEQA Significance Thresholds

MR-1) Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

The Alternative 1, 2, and 3 areas are designated as MRZ-4, an area where there is not enough information available to determine the presence or absence of mineral deposits. Therefore, these alternatives would not result in the loss of availability of a known mineral resource classified by the state, and there would be no impact.

MR-2) Would the Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

The Alternative 1, 2, and 3 areas are not identified in the Riverside County General Plan or the Palo Verde Valley Area Plan as a locally important mineral resource recovery site. Therefore,

the loss of availability of a delineated locally important mineral resource recovery site would not occur. There would be no impact.

MR-3) Would the Project be an incompatible land use located adjacent to a state classified or designated area or existing surface mine?

Alternatives 1, 2, or 3 would not be located adjacent to, or prevent access to, a state designated area or existing surface mine. Therefore, these alternatives would not be an incompatible land use with a state-classified or designated area for mining operations. No impact would occur.

MR-4) Would the Project expose people or property to hazards from proposed, existing or abandoned quarries or mines?

The Alternative 1, 2, and 3 areas are not used for mineral production, nor are the areas under claim, lease, or permit for the production of locatable, leasable, or salable minerals or mineral materials. These alternatives would not expose people or property to hazards from proposed, existing, or abandoned quarries or mines. No impact would occur.

4.11.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.11 would be maintained. The Project area would remain available for applications to the BLM for solar development, mineral exploration, or other uses consistent with the CDCA Plan, and there would be no impacts to mineral resources.

4.11.6 Cumulative Impacts

The geographic scope of cumulative effects with respect to mineral resources includes all areas underlain by sand and gravel within eastern Riverside County. Past, present, and reasonably foreseeable future projects that occupy land area for non-mining uses, such as urban development or the construction of energy facilities, could combine to reduce the availability of, or access to, sand and gravel. Therefore, all of the projects listed in Tables 4.1-1 and 4.1-2 are considered within the geographic scope of analysis. The temporal scope of the analysis would include the duration of the Project through decommissioning. Following decommissioning, the Project area would again become available for development of mineral resources.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

In general, the cumulative projects are expected to have had a minor adverse impact on the availability of mineral resources, since sand and gravel is a widespread resource that underlies most of the desert basins in the region. If all of the projects in the cumulative scenario were to be implemented, the resulting loss of land could amount to as much as 316,675 acres, 225,000 of

which would be for the purpose of renewable energy development. The contribution of the Project to this total would be 3,616 acres, or about one percent of the total land area. There are approximately 1,544,000 acres of land underlain by Quaternary geologic units within eastern Riverside County. Even if all projects were implemented and were in operation at the same time, over 1,200,000 acres would remain available for aggregate resource exploration and production, and cumulative impacts associated with the availability of minerals (impact MR-1 and MR-2) would be less than significant.

The issues of compatibility of site use with adjacent mines or state designated mineral areas (impact MR-3) and exposure of people to hazards associated with mining (impact MR-4) are site-specific, and are unaffected by the presence of other projects in the cumulative scenario. Therefore, there are no cumulative impacts associated with these criteria.

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 2 to the land area made unavailable for mineral development would be lower than that of the Proposed Action. Therefore, the contribution of Alternative 2 to cumulative impacts would be minimal.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 3 to the land area made unavailable for mineral development would be lower than that of either Alternatives 1 or 2. Therefore, the contribution of Alternative 3 to cumulative impacts would be minimal.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, development of mineral resources, or other development. Alternative 4 would not contribute to cumulative impacts to mineral resources.

4.11.7 Residual Impacts

Once the Project is decommissioned, the land area would be made available for development of mineral resources, so there would be no residual effect from the Project.

4.12 Noise

4.12.1 Methodology for Analysis

This analysis evaluates potential noise impacts of the Proposed Action and Alternatives based on review of sensitive receptors, ambient noise levels, and projected noise levels that would be associated with construction, operation, maintenance, and decommissioning of the Project and alternatives. Impact discussions are based, in part, on the modeled noise levels of the Project as presented in the Noise Technical Report prepared by the Applicant (URS 2015; provided in Appendix R), and peer reviewed by BLM. The following methods were used to evaluate impacts.

Short-Term Construction and Decommissioning Noise Impacts and Criteria

Project construction noise was estimated by determining the contributing sound sources associated with each construction activity, and calculating the aggregate sound levels that propagate to a representative receptor location. Table 4.12-1 shows the nine construction activities which were evaluated, and how they are expected to overlap to result in aggregate noise levels. Three representative noise-sensitive receptors were selected based on the locations of residents and sensitive receptors, as shown in Figure 3.12-1, as well as the ambient noise measurements results presented in Table 3.12-2. Figure 3.12-1 shows that locations ST03, ST05, and Nearest Noise Sensitive Receptor (NNSR) are situated in the nearby Nicholls Warm Springs/Mesa Verde residential community. Location ST11 is located closer to the Project area, but is not a sensitive receptor location; thus locations ST03, ST05, and NNSR represent the nearest sensitive receptor locations. The ambient noise measurement results also show that locations ST03, ST05, and NNSR have the lowest ambient noise levels measured in the study area, probably because they are the most distant from Interstate 10.

Table 4.12-1. Construction Activity Breakdown for Noise Analysis (assumes 25 month construction schedule)

Activity[1]	Timeframe[2]	Working Days	Max No. Workers[3]	Activity Description
1	Dec. 2016 – Jan. 2017	42	60	Move On (grading of laydown, construction trailers, and parking areas)
2	Jan. 2017 – June 2018	378	80	Grading – site preparation/ clearing/grading and balance of retention basins
3	Mar. 2017 – Aug. 2018	378	160	Construction – solar array structural components (posts, tilts, rails, trackers)
4	Apr. 2017 – Sept. 2018	378	80	Trenching – PCS excavation, PCS placement, underground cable trenching
5	May 2017 – Oct. 2018	378	310	Construction – solar module installation
6	Apr. 2018 – Sept. 2018	126	60	Construction – On-Site Substation
7	Apr. 2018 – Sept. 2018	126	60	Construction – Gen-Tie
8	Apr. 2018 – Sept. 2018	126	60	Construction – Operations and Maintenance Building

Table 4.12-1. Construction Activity Breakdown for Noise Analysis (assumes 25 month construction schedule)

Activity[1]	Timeframe[2]	Working Days	Max No. Workers[3]	Activity Description
9	July 2018 – Dec. 2018	126	60	Construction – testing, cleanup, and restoration

Notes:
1 – The specific activities are defined in the Noise Technical Report prepared by the Applicant (URS 2015; provided in Appendix R)
2 - Exact dates are likely to vary. Timeframe is presented only to show how overlap of activities is used to calculate aggregate noise levels.
3 - Peak workforce estimated at 810 workers due to overlapping of construction activities. Workforce numbers may vary.

Noise impacts can occur under either of two separate conditions: (1) when noise from a project would exceed an absolute level that is set as a standard for the receiving land use; or (2) when noise from a project would increase existing ambient noise levels by some substantial degree. Since construction noise impacts are temporary, criteria based on long term land use impacts would not apply. However, construction would increase ambient levels during the construction period. While BLM has not established an agency-wide criteria for substantial noise increases, the Federal Highway Administration has compiled a report that indicates most state agencies consider an increase of 10-15 dBA (energy equivalent level, or Leq) to be "substantial" (FWHA 1995). This finding supports the 10 dBA increase criterion that Riverside County and BLM have used on similar, nearby projects such as the Blythe Mesa Solar Project (Riverside County 2014). While a 5 dBA increase would be "readily perceptible," it would not be considered as substantial as an increase in noise level of 10 dBA, which is judged by most people as a doubling of the sound level (Riverside County 2017). Therefore, noise from onsite construction activity or offsite traffic noise would be considered an adverse impact if its acoustical contribution caused an increase above the baseline outdoor ambient sound level (Leq) by more than 10 dBA. For construction workers, the OSHA maximum time-weighted average noise exposure level of 90 dBA over an eight-hour work shift, regulated by Cal/OSHA, is considered to be an adverse noise impact.

Long-Term Operation and Maintenance Noise Impacts and Criteria

The Applicant used the Cadna/A® Noise Prediction Model (Version 4.5.147) to estimate the propagation of sound from aggregate Project operations, and thereby predict noise levels at various distances from the Project, including the representative noise- sensitive receptors selected for the ambient sound survey.

Impact criteria associated with aggregate noise from stationary sources would include the following daytime and nighttime sound levels from the Riverside County General Plan Noise Element and the County's Noise Ordinance:

- From 7:00 a.m. to 10:00 p.m., 65 dBA Leq (10 minute); and
- From 10:00 p.m. to 7:00 a.m., 45 dBA Leq (10 minute).

Vibration Impacts

The general procedures for addressing vibration issues that are specified in the California Department of Transportation (CalTrans) Transportation and Construction Vibration Guidance Manual were used to assess potential vibration impacts from the Project (Caltrans 2013). A peak particle velocity threshold identified by Caltrans is used in this analysis to determine the level of vibration impacts related to adverse human reaction and risk of architectural damage to normal buildings. The peak particle velocity threshold is 0.20 inches per second (in/sec) (Caltrans 2013). This peak particle velocity level has been found to be annoying to people in buildings and can pose a risk of architectural damage to buildings.

4.12.1.1 CEQA Significance Criteria

The criteria listed below were used to determine if the proposed Project would result in significant impacts from noise under CEQA. These criteria were obtained from the CEQA Environmental Checklist, Appendix G of the state CEQA Guidelines. Under CEQA, the proposed Project and alternatives would have a significant impact from noise if they would cause:

NOI-1) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

NOI-2) Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

NOI-3) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

NOI-4) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the exposure of people residing or working in the project area to excessive noise levels.

NOI-5) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

NOI-6) For a project within the vicinity of a private airstrip, the exposure of people residing or working in the project area to excessive noise levels.

The following additional significance criterion from the County of Riverside Environmental Assessment form is used in the analysis. A project could potentially have significant impacts if it results in:

NOI-7) Impacts from railroad or highway noise.

CEQA does not set absolute noise level standards for receiving land uses (NOI-1) nor define what noise level increase would be considered substantial either temporarily (NOI-2) or permanently (NOI-5). In its Noise Ordinance, Riverside County has established absolute maximum levels (Lmax) allowed in various general plan land use designations (Riverside County 2007). This ordinance exempts construction activities from these requirements when the construction project is located a quarter mile or more from the nearest inhabited dwelling, which is the case for the DQSP. Neither the County's General Plan nor Municipal Code establish

numeric maximum acceptable construction source noise levels at potentially affected receivers, or maximum temporary or periodic noise increases (Riverside County 2017). Therefore, the 10 dBA increase criteria noted above, which has been used by both BLM and Riverside County on previous similar projects, is used to assess impact significance for NOI-2.

Vibration-sensitive land uses such as high-precision manufacturing facilities or research facilities with optical and electron microscopes do not occur in the Project area. Therefore, a substantial impact resulting from excessive groundborne vibration would depend on whether a nuisance, annoyance, or physical damage to any structure could occur.

4.12.2 Applicant-Proposed Measures

In their Noise Technical report, the Applicant proposed a measure to orient their post installation equipment in a manner to reduce noise impacts at the locations of the nearest sensitive receptors. Based on noise measurements conducted during post driving operations at a similar facility, sound levels are approximately 7 dBA quieter at the back end of the equipment when compared to the front end. In order to reduce impacts at the NNSR, any Project locations within 6,560 feet (2 kilometers) of the NNSR would have the post installation equipment oriented with its back facing towards the northeast (towards the NNSR. At locations outside of a radial distance of 6,560 feet from the NNSR, orientation of the post installation equipment would not affect noise levels at the NNSR. The 6,560 foot radius is shown on Figure 4.12-1.

In their analysis of noise from construction-related traffic, the Applicant assumed that construction vehicles would be maintained according to manufacturers' instructions and recommendations, and would employ factory-approved exhaust mufflers. In addition, trucks hauling materials and equipment would comply with local ordinances and regulations with respect to travel speed and, if applicable, limitations on usage of compression-type braking.

To protect construction workers from equipment noise levels which exceed the maximum time-weighted average noise exposure level of 90 dBA over an eight-hour work shift, the Applicant proposes to instruct Project contractors to post warnings with respect to areas that may be noise level hazards, and to provide construction workers with OSHA approved hearing protection devices as part of an applicable hearing conservation program.

As discussed in Section 4.1.6, the impact analysis assumes that the APMs have been implemented, and these measures are therefore requirements for approval of the Project. The APMs are to be incorporated into the EICMPP/MMRCP, along with the agency-required mitigation measures.

4.12.3 Direct and Indirect Impacts

4.12.3.1 Alternative 1: Proposed Action

Construction

Onsite Construction

As shown in Table 4.12-2, during months 6 through 21 of Project construction, construction activities would cause aggregate construction noise levels at the NNSR to be 12 dBA higher than the measured baseline daytime outdoor ambient sound level. This situation would occur primarily due to the overlap of construction activity #3 and activity #5. Therefore, a temporary,

but adverse impact would result in these months because the ambient sound level would increase more than 10 dBA. However, by orienting the post installation equipment as discussed in Section 4.12.2, the sound levels are approximately 7 dBA quieter at the back end of the equipment when compared to the front end, and therefore the aggregate construction noise level is expected to increase by less than 10 dBA. Mitigation Measure NOISE-1 would require monitoring during construction to verify that the orientation of the post installation equipment has this effect.

For other construction months, and for the other two nearest noise sensitive receptors (ST03 and ST05), a less than 10 dBA change in daytime outdoor ambient sound levels would occur under down-wind conditions. Under upwind and calm meteorological conditions, a less than 10 dBA change in ambient noise levels would be expected during the day for all three noise sensitive receptor locations.

While construction activities are not expected to occur at night, some limited quantities of certain equipment such as generators (to provide lighting and HVAC for offices and security personnel on-site) are anticipated to operate through nighttime hours. Noise modeling shows that no ambient noise changes over 10 dBA are expected at any of the three nearest noise sensitive receptors under any of the modeled meteorological conditions.

Table 4.12-2. Predicted Daytime On-Site Project Construction Noise Per Activity at Nearest Noise Sensitive Receptor (NNSR)

Month	Construction Activity Noise (Estimated dBA per Indicated Activity) under Down-Wind Conditions									Aggr. (dBA)	Base (dBA)	Future (dBA)	Diff.
	1	2	3	4	5	6	7	8	9				
1	36									36	41	42	1
2	36	36								39	41	43	2
3		36								36	41	42	1
4		36	49							50	41	51	10
5		36	49	41		29				50	41	51	10
6[1]		36	49	41	49	29				53	41	53	**12**
7[1]		36	49	41	49	29				53	41	53	**12**
8[1]		36	49	41	49	29				53	41	53	**12**
9[1]		36	49	41	49	29				53	41	53	**12**
10[1]		36	49	41	49	29				53	41	53	**12**
11[1]		36	49	41	49	29				53	41	53	**12**
12[1]		36	49	41	49	29				53	41	53	**12**
13[1]		36	49	41	49	29				53	41	53	**12**
14[1]		36	49	41	49	29				53	41	53	**12**
15[1]		36	49	41	49	29				53	41	53	**12**
16[1]		36	49	41	49	29				53	41	53	**12**
17[1]		36	49	41	49	29	30	27		53	41	53	**12**
18[1]		36	49	41	49	29	30	27		53	41	53	**12**
19[1]		36	49	41	49	29	30	27		53	41	53	**12**
20[1]			49	41	49	29	30	27	31	53	41	53	**12**
21[1]			49	41	49	29	30	27	31	53	41	53	**12**
22				41	49	29	30	27	31	50	41	51	10
23					49				31	49	41	50	9
24									31	31	41	41	0
25									31	31	41	41	0

Table 4.12-2. Predicted Daytime On-Site Project Construction Noise Per Activity at Nearest Noise Sensitive Receptor (NNSR)

Month	Construction Activity Noise (Estimated dBA per Indicated Activity) under Down-Wind Conditions									Aggr. (dBA)	Base (dBA)	Future (dBA)	Diff.
	1	2	3	4	5	6	7	8	9				

Sources: US Department of Transportation 2006; URS 2015
Notes:
Aggr. = aggregate predicted noise level from all activities.
Base = measured baseline (i.e., existing outdoor ambient sound level).
Future = logarithmic sum of Aggr. and Base.
Diff. = arithmetic difference (in dBA) between Future and Base. A difference of > 10 dBA indicates a noise impact (value in **bold**).
1 - Noise levels presented for months 6 -21 include post driving machines and do not consider noise mitigation. Noise mitigation is expected to reduce the noise associated with activity 3 (installation of posts) from 49 to approximately 42 dBA, the aggregate for those months to below 51 dBA, and the Differential to below 10 dBA.

Construction Traffic

Construction would result in an increase in roadway traffic on State Route 78 and 16th Avenue/Seeley Avenue for personnel and deliveries of construction materials and equipment. Some of the representative noise sensitive receptors are located long those roads, near measurement locations ST09 and ST10 (see Figure 3.12-1). Although the noise from each individual vehicle would generally be the same as vehicles which currently travel on those roads, the number of these individual noise events would increase. The increase in peak hour traffic noise levels (Leq) associated with construction traffic are both calculated to be less than 10 dBA (2.85 and 7.34 dBA, respectively) at the State Route 78/16th Avenue/Seeley Avenue intersection. Therefore, the increase in traffic noise due to Project construction would be less than 10 dBA.

Construction Occupational Noise Exposure

Outdoor sound levels during construction may exceed the OSHA 90 dBA threshold near certain operating or idling powered mobile and stationary equipment. These noise levels would diminish with distance from the equipment, and would be limited to areas within the Project boundary. The Applicant proposes to mitigate the potential impact by requiring Project contractors to post warnings with respect to areas that may be noise level hazards, and to provide construction workers with OSHA approved hearing protection devices as part of an applicable hearing conservation program.

Construction Laydown, Staging and Parking Areas

As shown in Figure 2-2, the Project would include three construction laydown and parking areas. The area which is closest to the noise sensitive receptors is the one at the site entrance on the northern boundary of the facility. This is also the area which would be subject to the most noise generating activity, as it is the primary site entrance and staging area for equipment. Therefore an evaluation of noise sources at this location presents the most conservative analysis of noise associated with the temporary construction laydown areas.

The most prominent noise source for the construction laydown areas is the truck staging area, where trucks may idle with their engines running and equipment such as forklifts may be used to offload materials. The composite noise level associated with these items is estimated to be 79 dBA L_{max} at 50 feet. Because the NNSR is located approximately 4,800 feet away, the expected

noise level from the northern laydown/staging area would be no greater than 22 dBA, which is lower than the measured existing baseline level of 41 dBA at the NNSR.

Vibration

Temporary ground-borne vibration during construction could result from the operation of heavy construction equipment such as graders, bulldozers, and loaded haul trucks. These pieces of equipment can generate vibration levels of up to 0.09 in/sec at a distance of 25 feet (Caltrans 2013), but would attenuate within a short distance of the source. Because the NNSR is located approximately 4,800 feet away, there would be no expected vibration impacts.

Operation and Maintenance

Potential sources of long-term noise during operations include onsite operation and maintenance of the solar power plant equipment, traffic associated with operations, and gen-tie corona noise.

Onsite Operations

Noise sources for operations are expected to be much lower than those associated with construction. Operations are unlikely to involve use of post installation equipment, and would also involve much lower volumes of truck traffic. As shown in Table 4.12-3, Project operational noise levels at ST03, ST05, and the NNSR are expected to be lower than existing outdoor ambient sound levels. Operational noise levels would all be lower than 45 dBA L_{eq} (10-minute period), as required by the Riverside County Noise Element. Therefore, Project operational noise is not anticipated to cause an increase in ambient noise level of 10 dBA or more at the three nearest noise sensitive receptors.

Operational Traffic

Traffic to support Project operations involves only a small number of vehicles, resulting in only a minor increase in existing levels of roadway traffic. The noise impacts would be much lower than those associated with Project construction, and would not cause an increase in ambient noise level of 10 dBA or more at the three nearest noise sensitive receptors.

Gen-Tie Line Corona Noise

The term corona is used to describe the breakdown of air into charged particles caused by the electrical field at the surface of a conductor. Audible noise levels generated by corona discharge vary depending on weather conditions as well as the voltage and condition of the line. Wet weather conditions often increase corona discharge due to accumulation of raindrops, fog, frost, or condensation on the conductor surface, which causes surface irregularities thereby promoting corona discharge. Corona noise levels for a transmission line with similar voltage (220 kV) as the proposed 230 kV gen-tie line have been estimated to be approximately 30 dBA at the edge of the transmission line ROW during dry conditions (CPUC 2010). During adverse weather conditions such as fog or rain, which are rare in the study area, corona discharge could be up to 20 dBA higher than in dry conditions. Therefore, under worst-case conditions, corona noise could be as high as 50 dBA at the edge of the proposed gen-tie line ROW.

Table 4.12-3. Predicted Project Operational Noise Levels

Meteorological Condition	ST03				ST05				Nearest Noise Sensitive Receptor (NNSR)			
	PL (dBA)	BL (dBA)	Future (dBA)	Diff. (dBA)	PL (dBA)	BL (dBA)	Future (dBA)	Diff. (dBA)	PL (dBA)	BL (dBA)	Future (dBA)	Diff. (dBA)
Wind neutral[1]	29	39	39	0	28	40	40	0	31	41	41	0
Temperature inversion[2]	33	39	40	1	32	40	41	1	35	41	42	1
9 mps wind from N[3]	26	39	39	0	25	40	40	0	28	41	41	0
9 mps wind from S[4]	33	39	40	1	32	40	41	1	35	41	42	1

Source: URS 2015
Notes:
1 - Calm meteorological conditions (winds less than 0.5 meters per second [mps] in any direction), CONCAWE Stability Class D.
2 - Calm meteorological conditions (no wind), CONCAWE Stability Class G.
3 - Winds are from the north, at 9 mps (29.5 feet per second [fps]), CONCAWE Stability Class D.
4 - Winds are from the south, at 9 mps (29.5 fps), CONCAWE Stability Class D.
ST03 = short-term (ST) baseline ambient sound level survey position "ST03."
ST05 = short-term (ST) baseline ambient sound level survey position "ST05."
NNSR = nearest noise sensitive receptor ("unknown structures" located between LT1 and ST11).
PL = predicted sound pressure level, dBA.
BL = measured baseline level (from daytime short-term measurement in field), dBA.
Future = logarithmic sum of PL and BL.
Diff. = arithmetic difference (in dBA) between Future and BL. A difference of > 10 dBA indicates a noise impact (value in **bold**).

The closest noise sensitive receptor along the proposed gen-tie line route is location ST11, at a distance of approximately two miles. Assuming a maximum noise level of 50 dBA at the edge of the ROW during wet weather conditions and accounting for how noise levels from line sources attenuate over soft surfaces, corona noise would attenuate to lower than measured background noise (41 dBA) over two miles. Therefore, corona noise levels that would be associated with the proposed gen-tie line would not conflict with USEPA noise guidelines for residences (i.e., 55 dBA L_{dn}).

Vibration

Operation and maintenance of the Project would not introduce any new sources of perceivable groundborne vibration to the study area. Consequently, the Project would cause no operation- or maintenance-related adverse effects associated with groundborne vibration. Because implementation of the Project would not result in exposure of persons to or generation of excessive groundborne vibration, it also would not expose them to or generate excessive groundborne noise levels.

Decommissioning

At the end of the 30-year term of the BLM ROW grant, Project operation would cease and associated facilities would be decommissioned and dismantled, and the site would be restored. Decommissioning activities could generate temporary noise levels similar to those that would occur during construction of the Project, though slightly lower because post installation equipment would not be necessary. Therefore, it is unlikely that noise during decommissioning activities would increase ambient noise by more than 10 dBA.

4.12.3.2 Alternative 2: Resource Avoidance Alternative

Construction

The sources of noise and vibrations associated with Project construction would be the same under Alternative 2 as under the Proposed Action. The primary difference between Alternative 2 and the Proposed Action would be location of the noise and vibration sources. Under Alternative 2, the Project area would be reduced in size relative to that of the Proposed Action. Although the On-Site Substation, gen-tie line, site access roads and entrance, and temporary staging areas would be located further to the east than in the Proposed Action, they would be approximately the same distance from the sensitive receptors. However, the northern boundary of the solar arrays would be moved further to the south under Alternative 2. As discussed in Section 4.12.3.1, the primary source of noise associated with construction, and the only noise source which would contribute to an increase of more than 10 dBA in the ambient sound level, is the post installation equipment. The post installation equipment would be used only in the solar arrays, for installation of solar panels. Therefore, the most substantial noise source under Alternative 2 would be moved further from the location of the NNSR, and construction noise impacts to sensitive receptors would therefore be lower than under the Proposed Action.

All other noise and vibration sources associated with construction of Alternative 2, including construction traffic, occupational noise, and noise in the construction laydown areas, would be about the same, and in the same locations, as those for the Proposed Action. As discussed in

Section 4.12.3.1, none of these other noise sources are expected to result in an increase of more than 10 dBA in the ambient sound level at the NNSR.

Operation and Maintenance

The noise and vibration sources associated with Alternative 2 would be about the same, and in the same locations, as those associated with the Proposed Action. Any noise or vibration sources that would be directly associated with the solar array fields would be moved to the south, further away from any sensitive receptors. Therefore, the impact of these noise sources would be lower than those associated with the proposed Action. All other noise sources associated with Alternative 2 would be the same, and in the same location, as those for the Proposed Action. As discussed in Section 4.12.3.1, none of these other noise source is expected to result in an increase of more than 10 dBA in the ambient sound level at the NNSR.

Decommissioning

Decommissioning activities under Alternative 2 could generate temporary noise and vibration levels similar to those that would occur during construction of the Proposed Action, though noise from decommissioning activities would be slightly lower because post-installation equipment would not be necessary. In addition, noise sources associated with removal of the solar arrays would be moved further to the south, away from the sensitive noise receptors. Therefore, it is unlikely that noise during decommissioning activities would increase ambient noise by more than 10 dBA.

4.12.3.3 Alternative 3: Reduced Project Alternative

Construction

The sources of noise and vibrations associated with Project construction would be the same under Alternative 3 as under the Proposed Action. The primary difference between Alternative 3 and the Proposed Action would be location of the noise and vibration sources. Under Alternative 3, the Project area would be reduced in size relative to that of both Alternatives 1 and 2. Although the On-Site Substation, gen-tie line, site access roads and entrance, and temporary staging areas would be located further to the east under Alternative 3, they would be approximately the same distance from the sensitive receptors as in Alternatives 1 and 2. However, the northern boundary of the solar arrays would be moved further to the south under Alternative 3, and thus located further from the sensitive receptors than in Alternatives 1 and 2. As discussed in Section 4.12.3.1, the primary source of noise associated with construction, and the only noise source which would contribute to an increase of more than 10 dBA in the ambient sound level is the post installation equipment. The post installation equipment would be used only in the solar arrays, for installation of solar panels. Therefore, the most substantial noise source under Alternative 3 would be moved further from the location of the NNSR, and construction noise impacts to sensitive receptors would therefore be lower than under Alternatives 1 or 2.

All other noise and vibration sources associated with construction of Alternative 3, including construction traffic, occupational noise, and noise in the construction laydown areas, would be about the same, and in the same locations, as those for Alternatives 1 and 2. As discussed in

Section 4.12.3.1, none of these other noise source is expected to result in an increase of more than 10 dBA in the ambient sound level at the NNSR.

Operation and Maintenance

The noise and vibration sources associated with Alternative 3 would be about the same, and in the same locations, as those associated with the Proposed Action. Any noise or vibration sources that would be directly associated with the solar array fields would be moved to the south, further away from any sensitive receptors. Therefore, the impact of these noise sources would be lower than those associated with Alternatives 1 and 2. All other noise sources associated with Alternative 3 would be the same, and in the same location, as those for the Proposed Action As discussed in Section 4.12.3.1, none of these other noise source is expected to result in an increase of more than 10 dBA in the ambient sound level at the NNSR.

Decommissioning

Decommissioning activities under Alternative 3 could generate temporary noise and vibration levels similar to those that would occur during construction of Alternative 2, though noise from decommissioning activities would be slightly lower because post-installation equipment would not be necessary. In addition, noise sources associated with removal of the solar arrays would be moved further to the south, away from the sensitive noise receptors. Therefore, it is unlikely that noise during decommissioning activities would increase ambient noise by more than 10 dBA.

4.12.4 Application of CEQA Significance Thresholds

NOI-1) Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The applicable noise ordinance is Riverside County Ordinance 847, which includes a daytime or nighttime noise limit of 45 dBA L_{max} as the maximum decibel level allowed in Rural Residential areas, but only if the distance between the Project site and the nearest inhabited dwelling is less than one quarter-mile. Alternatives 1, 2, and 3 are exempt from this ordinance because the NNSR is more than one quarter-mile away (approximately 4,800 feet) from the Project boundary. There would be no impact.

NOI-2) Would the Project result in substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Temporary or periodic increases in ambient noise levels would occur during construction, and the construction noise would be perceptible at the locations of the nearest residences. The construction noise impact to ambient noise levels would be intermittent, and would diminish with distance. The impact would be temporary, occurring only for the duration of construction, and would occur only in the daytime. However, the increase in noise levels would be sufficient to create annoyance. As shown in Table 4.12-2, concurrent construction activities (Activities 3 and 5) would cause aggregate construction noise levels at the NNSR to be 12 dBA higher than the measured baseline daytime outdoor ambient sound level. Therefore, a temporary significant

impact would result in Months 6 through 21. However, with implementation of the Applicant's proposed measure to orient post installation equipment away from the NNSR, this impact would be reduced to less than significant.

Under Alternatives 2 and 3, the post installation equipment would be operated further to the south, at a further distance from the sensitive receptors, than under Alternative 1 and would be subject to the same APM to be oriented away from the sensitive receptors. Therefore, the noise impacts associated with Alternatives 2 and 3 would be lower than those of Alternative 1. With implementation of the monitoring requirement of Mitigation Measure NOISE-1, the impact from Alternatives 2 and 3 would also be less than significant.

NOI-3) Would the Project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Temporary sources of groundborne vibration and noise during construction of Alternative 1, Alternative 2, or Alternative 3 would result from operation of conventional heavy construction equipment such as graders, bulldozers, and loaded haul trucks. These pieces of equipment can generate vibration levels of up to 0.09 in/sec at a distance of 25 feet (Caltrans 2013), but would attenuate within a short distance of the source. Because the NNSR is located approximately 4,800 feet away from the Project boundary under Alternative 1, 4,300 feet away from the Project boundary under Alternative 2, and 7,350 feet away from the Project boundary under Alternative 3, there would be no expected vibration impacts. Sources of vibration during operations and decommissioning of Alternatives 1, 2, or 3 would be lower than those for construction, and would also likely be located further away from the sensitive receptors. Therefore, vibration impacts from all phases of Alternatives 1, 2, and 3 would be less than significant.

NOI-4) Would the Project result in for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, where people residing or working in the project area would be exposed to excessive noise levels?

Alternatives 1 and 2 would be located approximately 1.5 miles from the Blythe Airport; Alternative 3 would be located approximately 1.7 miles from the Blythe Airport. Given this distance, noise from construction, operations and maintenance, and decommissioning would attenuate to below ambient noise levels at the airport. Therefore, noise impacts during construction, operation and decommissioning of these alternatives would be less than significant.

NOI-5) Would the Project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Alternatives 1, 2, and 3 would generate noise associated with the operation and maintenance of the Project, operational traffic, and gen-tie line corona discharge. Operational noise, operational traffic noise, and corona noise levels for these alternatives would not result in substantial changes to noise levels. As shown in Table 4.12-3, Project operational noise is expected to be quieter than existing outdoor ambient sound levels. The change in the traffic noise level due to operational traffic would be less than 3 dBA. Due to noise attenuation over 2 miles to the closest noise sensitive receptor, corona noise levels that would be associated with the proposed gen-tie line would not exceed the Riverside County General Plan or Noise Ordinance limits for

residences in the area (i.e., 45 dBA L_{dn}), and noise impacts during operations would be less than significant.

NOI-6) Would the Project within the vicinity of a private airstrip, result in people residing or working in the project area being exposed to excessive noise levels?

Alternatives 1, 2, and 3 are not located near a private airstrip. There would be no impacts under any of the alternatives.

NOI-7) Would the Project result in impacts from railroad or highway noise?

Alternatives 1, 2, or 3 would not utilize railroad service for delivery of materials or workers; therefore, no impacts related to railroad noise would occur. During construction of Alternative 1, workers commuting to the Project area and delivery of materials would result in a slight increase in traffic along State Route 78. The anticipated change in daily and afternoon peak hour traffic noise levels (L_{eq}) for Alternative 1 are both calculated to be less than 10 dBA (2.85 and 7.34 dBA, respectively) at the State Route 78/16th Avenue/Seeley Avenue intersection. Traffic to support Project operations involves only a small number of vehicles, resulting in only a minor increase in existing levels of roadway traffic. The noise impacts would be much lower than those associated with Project construction. The impacts of highway noise under Alternatives 2 or 3 would be about the same as those for Alternative 1. Therefore, the increase in highway noise due to Project construction and operation would be less than significant.

4.12.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.12 would be maintained. Noise and vibration levels in the vicinity of the Project site would not be expected to change noticeably from existing conditions.

4.12.6 Cumulative Impacts

Noise levels tend to diminish quickly with distance from a source; therefore, the geographic scope for cumulative impacts associated with noise would be limited to projects located within approximately one-half mile of the Project, including the gen-tie line. The temporal scope for cumulative impacts associated with noise would include the construction, operation, maintenance, and decommissioning phases of the Project. Once decommissioning is completed, there would be no residual noise impacts associated with the Project.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

The ambient noise levels reported in Section 3.12.1.2 represent the cumulative noise levels of all existing projects, and the analysis presented in Table 4.12-2 is a cumulative analysis of the

contribution of the Project construction to those cumulative noise levels. As shown in Table 4.12-2, noise sources associated with the Project construction would combine with other existing noise sources, and would result in an increase in ambient noise levels at the locations of ST03, ST05, and the NNSR. The increase would be temporary during construction, and would be mitigated by the Applicant's proposal to orient the post installation equipment away from the locations of the sensitive receptors. With mitigation, the contribution of the Project would not be cumulatively considerable (impact NOI-1 and NOI-2). As shown in Table 4.12-3, the contribution of Project operations to these ambient noise levels is expected to be minimal, so any contribution of the Project to cumulative noise impacts would be temporary (impact NOI-5).

The only past, present, and reasonably foreseeable future projects within one-half mile include the RE Crimson Solar Project, NRG Blythe PV Project, BMSP, and transmission lines within the corridors along the southwestern and northern boundaries of the Project area. If there were overlapping construction periods for the DQSP, BMSP, RE Crimson Solar Project, and gen-tie lines for other projects, noise levels associated with onsite construction and associated traffic could increase, potentially creating cumulative noise impacts. However, concurrent construction of all of these projects is unlikely, given their different timeframes for environmental analysis and permitting. The incremental effects of the Project would be negligible, and would not be cumulatively considerable (impact NOI-7).

During operations, corona noise impacts of multiple gen-tie lines in the gen-tie corridor would occur simultaneously. As discussed in Section 4.12.3.1, the closest noise sensitive receptor along the proposed gen-tie line route is location ST11, at a distance of approximately two miles, and corona noise would attenuate to lower than measured background noise (41 dBA) over this distance. Therefore, the cumulative effect of the corona noise of the gen-tie lines in the corridor would not be noticeable by local residents.

Vibration associated with the cumulative projects would attenuate within a short distance of each of the project sites, so would not overlap with other projects to create a cumulative impact (impact NOI-3). Although the Project area is located in an Airport Land Use Plan area, noise from construction, operations and maintenance, and decommissioning would attenuate to below ambient noise levels at the airport, so the contribution from the Project would not be cumulatively considerable (impact NOI-4). The Project is not located near a private airport, so would not contribute to cumulative impacts (impact NOI-6).

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

As discussed in Section 4.12.3.2, the northern boundary of the solar arrays would be moved further to the south under Alternative 2. Because the only noise source that would contribute to an increase of more than 10 dBA in the ambient sound level would be the post installation equipment, the most substantial noise source would be moved further from the location of the NNSR. In addition, the Applicant's proposal to orient the post installation equipment away from the locations of the sensitive receptors would apply to Alternative 2. Therefore, the incremental contribution of Alternative 2 to cumulative noise impacts to sensitive receptors would be lower than under the Proposed Action.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

As discussed in Section 4.12.3.3, the northern boundary of the solar arrays would be moved further to the south under Alternative 3. Because the only noise source that would contribute to an increase of more than 10 dBA in the ambient sound level would be the post installation equipment, the most substantial noise source would be moved further from the location of the NNSR. In addition, the Applicant's proposal to orient the post installation equipment away from the locations of the sensitive receptors would apply to Alternative 3. Therefore, the incremental contribution of Alternative 3 to cumulative noise impacts to sensitive receptors would be lower than under Alternatives 1 or 2.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. Alternative 4 would not contribute to cumulative noise impacts.

4.12.7 Residual Impacts

There would be no residual adverse impacts after the Applicant's proposed mitigation has been incorporated.

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4.13 Paleontological Resources

4.13.1 Methodology for Analysis

This analysis of potential effects of the Proposed Action and Alternatives on paleontological resources is based on a review of relevant literature and site-specific information provided by the Applicant. Archival searches were conducted by the Natural History Museum of Los Angeles County Department of Vertebrate Paleontology (LACM), and the San Bernardino County Museum (SBCM), to identify additional information on fossil localities, and to document the occurrence of any other previously recorded but unpublished fossil locality from stratigraphic units in or near the Project site. The results of the archival search, and other literature research, were provided in the Paleontological Resources Assessment Technical Report (Reynolds and Lander 2016), which is provided in Appendix T. The information was used to assign geologic units within the area to a preliminary PFYC class, which classifies the units with respect to the potential for yielding significant fossils, in accordance with BLM protocol.

4.13.1.1 CEQA Significance Criteria

CEQA significance thresholds are based on criteria identified in Appendix G of the state CEQA Guidelines (CCR, Title 14, Division 6, Chapter 3, Sections 1500- 15387). A cultural resources impact is considered significant if implementation of the proposed Project would do any of the following:

- cause a substantial adverse change in the significance of a historical resource as defined in §15064.5;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5;
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- disturb any human remains, including those interred outside of formal cemeteries.

Based on these thresholds, a project could have potentially significant impacts to paleontological resources if it would:

PALEO-1) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.13.2 Applicant-Proposed Measures

In their POD, the Applicant proposed the following APMs to minimize impacts to paleontological resources.

APM Paleo-1: Pre-Construction Survey

The Applicant proposes that a paleontological resources survey of the Project area would be conducted prior to site construction or surface disturbance in requirements. A pre-construction

field survey of the Project area is required to finalize the preliminary BLM PFYC evaluation presented in Section 3.13.

A detailed description of the proposed survey is provided in the recommendations of the Paleontological Resources Assessment Technical Report (Reynolds and Lander 2016). The survey would provide ground truth verification of the preliminary PFYC assignment for each sedimentary unit exposed on the Project site, or justification for changing such an assignment.

During the pre-construction field survey, any newly discovered fossil localities would be documented, and the fossil remains recovered and fully treated in accordance with BLM and County requirements. Strata with a demonstrated potential for containing fossil remains (e.g., soils, paleosols, playa or lacustrine strata) would be noted. Specific components of the field survey include:

1. The pre-construction field survey will be conducted over the entire Project area to verify the PFYC assignment for each stratigraphic unit;
2. The survey will include mapping of the Bullhead Alluvium to clarify its stratigraphic and outcrop relations to other sedimentary units;
3. The results of the survey will be used to prepare a Project-specific Paleontological Resource Impact Mitigation Plan (PRIMP); and
4. Fossil remains recovered during the survey, as well as those recovered during construction-related earth-moving activities, will be managed as follows:

   a. The location of any larger fossil specimens will be documented using a hand-held GPS unit and recording NAD 83 UTM coordinates;
   b. The stratigraphic unit and level producing the specimen will be recorded;
   c. Corresponding specimen data and geographic and geologic locality data will accompany the specimen during recovery, transport to a laboratory facility, and the treatment process;
   d. Specimen stabilization, if necessary, will occur before removal and transport, and will include saturating the remains with hardening solution and enclosing them in protective plaster jacket;
   e. Fine-grained sediment surrounding specimen will be test screened to allow for the recovery of smaller fossil remains that are too small to be observed in the field;
   f. Larger fine-grained sediment or rock samples with volumes totaling amounts prescribed by SVP (2010) will be collected to allow for the recovery of additional small remains;
   g. Each specimen recovered during the field survey or construction-related earth-moving activities will be prepared to point allowing identification to lowest taxonomic level possible;
   h. The skeletal element(s) represented by the specimen will be identified by a knowledgeable paleontologist, who will also identify the specimen to the lowest taxonomic level possible;

i. The specimen will be catalogued with individual specimen and locality numbers provided by a designated museum repository;

j. A fossil specimen catalog and a fossil locality inventory will be compiled; and

k. The entire collection from the Project site will be transferred to the repository, where the collection will be permanently stored, maintained, and made available to qualified investigators for scientific research.

The treatment plan would be implemented under the PRIMP. A curation and storage agreement with the repository would be arranged prior to the pre-construction field survey. A suitable repository would be the Western Science Center in Hemet.

APM Paleo-2: Paleontological Resource Impact Mitigation Plan

A preliminary PRIMP has been developed based on data from the Paleontological Resources Assessment Technical Report (Reynolds and Lander 2016). The PRIMP will be revised, if necessary, based on the final PFYC determinations following the pre-construction survey. The PRIMP will identify areas to be monitored by a qualified paleontological professional. The final PRIMP will be submitted to BLM and the County for approval before any Project construction-related earth-moving activity begins. The Plan will be implemented during any construction activities that might disturb potentially fossil-bearing sediments. As described in the Paleontological Resources Assessment Technical Report (Reynolds and Lander 2016), the PRIMP will include:

1. A worker environmental awareness training program, to be prepared by a Project paleontologist, who will discuss fossil recognition and procedures to be implemented by earth-moving equipment operators when remains are encountered, particularly when a trained paleontologic monitor is not on site (e.g., avoidance of fossil locality, notification of appropriate Project, agency staff, and PRIMP personnel);
2. Paleontologic construction monitoring of earth-moving activities by a qualified (trained) monitor in portions of the Project area determined to have moderate or high sensitivity during the pre-construction field survey, thereby allowing for the discovery and recovery of any larger fossil remains exposed by such activities;
3. Assignment of additional field staff to recover an unusually large fossil specimen, thereby avoiding any diversion of the monitor from their designated task;
4. Collecting and processing fine-grained sediment samples to allow for the recovery of smaller remains;
5. Recording of associated specimen data (element, preliminary taxonomic identification, sample and locality data);
6. Full treatment of any remains recovered as a result of monitoring or sample processing (e.g., specimen preparation, identification, curation, cataloging); and
7. Preparation of a comprehensive final mitigation report of results and findings for submission to the BLM and the museum repository receiving the fossil collection.

The level of monitoring and the collection of sediment samples would be based on the PFYC assignment for the underling stratigraphic unit, and as determined appropriate based on pre-

construction field survey results. The specific Project activities requiring monitoring, as well as duration of monitoring in the event resources are not identified by monitoring activities, will be defined in the PRIMP. Acceptance of the final report by the BLM would signify completion of the PRIMP, and would demonstrate Project compliance with CEQA, NEPA, BLM guidelines, and mitigation measures developed during the environmental impact review process for the Project.

As discussed in Section 4.1.6, the impact analysis assumes that the APMs have been implemented, and these measures are therefore requirements for approval of the Project. The APMs are to be incorporated into the EICMPP/MMRCP, along with the agency-required mitigation measures.

4.13.3 Direct and Indirect Impacts

4.13.3.1 Alternative 1: Proposed Action

Construction

Project construction would include activities that require ground disturbance, including grading of roads and solar array areas, excavation of foundations, trenching for placement of underground cables, and installation of steel piles to hold solar panels. Excavations and grading may result in disturbance of soils and underlying sedimentary units up to a depth of 10 feet. For the Proposed Action, these activities are expected to result in the disturbance of approximately 3,831 acres of land. These ground disturbing actions have the potential to impact surface and subsurface paleontological resources in rock units and sediments that contain such resources.

Direct impacts to paleontological resources may include destruction due to breakage and fragmentation and loss of context in the stratigraphic record. Indirect impacts may result from increased accessibility to paleontological resources, resulting in an increased likelihood of looting or vandalism. Cumulative impacts could result from the Project in combination with other past, present, or reasonably foreseeable future projects' incremental contributions to impacts on paleontological resources located in similar stratigraphic units throughout eastern Riverside County. All impacts would result in a permanent loss of scientific information that might otherwise have been gained through preservation, recovery, and/or salvage of fossil resources.

The results of the Applicant's Paleontological Resources Assessment Technical Report (SRI 2016) are discussed in Section 3.13.1.3. The assessment was based on literature research, and did not include a field survey for paleontological resources. Therefore, the PFY Classifications and SVP Categories, discussed in Section 3.13.1.3 and repeated below, are preliminary, and may change based on the results of the pre-construction survey conducted as part of APM Paleo-1.

The assessment evaluated the potential for significant fossils to be presented in the stratigraphic units identified on the Project site (see Figure 3.7-1, Table 3.13-1, and Table 3.13-2). Of these, three units, including the active alluvial fan deposits, active aeolian sand dune deposits, and active alluvial wash deposits, were determined to have a low potential for significant fossils, due to their age of less than 10,000 years old. In general, these three units comprise a small percentage of the overall Project area. The active aeolian sand dune deposits are found only in the proposed location of the gen-tie line, and would not be affected by solar arrays. The active

alluvial wash and alluvial fan deposits are found only on the western fringe of the solar array area.

One of the units evaluated, the Bullhead Alluvium (equivalent to unit Qa3 on Figure 3.7-1), was assigned a preliminary PFYC of 3a (Moderate) or 4a (High). However, this unit is not included within the footprint of the Proposed Action, or any of the alternatives, and is unlikely to be impacted by the Project.

The stabilized alluvial fan deposits (Qf2; equivalent to unit Qa6 on Figure 3.7-1) were assigned a preliminary PFYC of 3b (Unknown). This unit comprises the northwestern portion of the Project area, and would be subject to ground disturbance associated with Project construction. Therefore, previously unknown, significant fossils may be impacted within this unit.

The largest area of the Project site, including the entire private land parcel, is comprised of the old terrace deposits (Qot; equivalent to unit Qpv on Figure 3.7-1), which were assigned a preliminary PFYC of 5a (Very High), and a SVP Category of High Potential. Because the largest area of the ground disturbance would occur in this area of high potential for the presence of significant fossils, construction of the Proposed Action has the potential to have direct, adverse impacts to paleontological resources.

Prior to beginning any ground disturbing activities, the Applicant would conduct a pre-construction field survey, as described in APM Paleo-1, and would finalize a PRIMP and provide it to BLM and the County for approval, as described in APM Paleo-2. These measures would reduce impacts to sensitive paleontological resources by identifying surficial resources in advance of ground disturbance; identifying areas with high potential for significant resources, which can be the focus of monitoring; training construction workers to identify fossil resources, including measures to take if they identify such resources; and ensuring that a qualified paleontologist is present for all earth disturbing work in sensitive areas (geologic units with PFYC Class 3(a) of higher). These measures would effectively identify fossil resources in the field during construction, and would ensure that their status is evaluated by qualified personnel, recorded, and recovered if appropriate. Implementation of the APMs as part of the Project would result in the avoidance or substantial reduction of adverse impacts to paleontological resources. Should unique fossil resources be salvaged during Project-related grading and construction, implementation of the APMs would result in an improved scientific understanding of the natural history and geology of the area that would not have been gained otherwise.

Implementation of the aforementioned APMs would not completely avoid or eliminate all potential impacts on paleontological resources resulting from Project construction, especially for activities requiring soil borings and driving of piles. Use of these methods may mean that site workers and/or paleontological monitors are unable to identify fossil resources prior to their disturbance or destruction. While intact fossils still may be found in drill cuttings, and fossils damaged by excavation equipment can sometimes be repaired in a laboratory, the nature of some of the construction methods to be used on-site means that implementation of the APMs may be unable to avoid impacts on paleontological resources.

Much of the ground disturbance associated with Project construction would be done with backhoes and graders, which would allow monitors to know the potential for significant fossils and to observe the ground before it is disturbed. As a result, construction of the Project could result in a net gain to the science of paleontology by allowing fossils that would not otherwise have been found to be identified, studied, and, if appropriate, recovered and preserved.

Operations

Operation and maintenance of the Project would not impact paleontological resources, because no earth disturbance would occur as a result of these activities.

Decommissioning

Decommissioning and closure of the Project site would not impact paleontological resources. The ground disturbed during these activities already would have been disturbed during construction, and would also be subjected to the APMs that would be required for construction.

4.13.3.2 Alternative 2: Resource Avoidance Alternative

Alternative 2 would cause the same type of paleontological resource-related impacts (beneficial and adverse) as the Proposed Action. As discussed in Section 3.13.1.3, the Project study area is comprised of seven different stratigraphic units, which have differing potentials for the presence of significant fossils. Of these, the most widely distributed in the Project area is the old terrace deposits (Qot), which has a preliminary PFYC of 5a (Very High) and SVP Category of High Potential. Although the total acreage of the Project under Alternative 2 would be reduced from that of the Proposed Action, the areas that would be left undisturbed under Alternative 2 are within the stratigraphic units that have PFYC classifications of either low or unknown potential. The portion of the Project area that overlies the old terrace deposits would be approximately the same as that of the Proposed Action. Although there would be a slight reduction of ground disturbance in the area of the old terrace deposits, the reduction would not be substantial, and the potential for impacts to fossils in the old terrace deposits would be approximately the same as that of the Proposed Action.

As with the Proposed Action, the implementation of APMs Paleo-1 and Paleo-2 would minimize the impact of construction-related activities by providing a mechanism for significant fossils to be identified before ground disturbance takes place; identifying areas with high potential for significant resources, which can be the focus of monitoring; training construction workers to identify fossil resources, including measures to take if they identify such resources; and ensuring that a qualified paleontologist is present for all earth disturbing work in sensitive paleontological areas.

4.13.3.3 Alternative 3: Reduced Project Alternative

Alternative 3 would cause the same type of paleontological resource-related impacts (beneficial and adverse) as the Proposed Action. However, because the size of the footprint of the solar arrays located on the old terrace deposits (Qot) would be smaller than that of the Proposed Action or Alternative 2, ground disturbance associated with construction activities on this stratigraphic unit would be reduced, and therefore the potential for adverse impacts to significant paleontological resources would be smaller.

As with the Proposed Action, the implementation of APMs Paleo-1 and Paleo-2 would minimize the impact of construction-related activities by providing a mechanism for significant fossils to be identified before ground disturbance takes place; identifying areas with high potential for significant resources, which can be the focus of monitoring; training construction workers to

identify fossil resources, including measures to take if they identify such resources; and ensuring that a qualified paleontologist is present for all earth disturbing work in sensitive areas.

4.13.4 Application of CEQA Significance Thresholds

PALEO-1) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Ground disturbance associated with construction of Alternatives 1, 2, and 3 would have the potential to adversely impact significant non-renewable paleontological resources that may be present within the Project area. Because the actual occurrence of these resources is unknown, the impact is potentially significant. The large extent of the old terrace deposits (Qot), which have a Very High potential for discovery of unknown significant paleontological resources, makes it impossible to avoid impacts by re-configuring the Project area. The acreage of ground disturbance on the Qot would be approximately the same under Alternative 2 as with Alternative 1. The potential for ground disturbance associated with construction of Alternative 3 to adversely impact significant non-renewable paleontological resources would be lower than that associated with Alternatives 1 and 2 due to the reduced acreage of ground disturbance on the Qot. However, the impact would still be potentially significant for Alternatives 1, 2, or 3.

The implementation of APMs Paleo-1 and Paleo-2 would minimize the impact of construction-related activities by providing a mechanism for significant fossils to be identified before ground disturbance takes place; identifying areas with high potential for significant resources, which can be the focus of monitoring; training construction workers to identify fossil resources, including measures to take if they identify such resources; and ensuring that a qualified paleontologist is present for all earth disturbing work in sensitive paleontological areas. When implemented, the pre-construction survey to be conducted as part of APM Paleo-1, and the PRIMP required as part of APM Paleo-2, would reduce adverse construction-related impacts on paleontological resources of Alternatives 1, 2, or 3 to a level that is less than significant.

No impacts to paleontological resources are anticipated during operation, maintenance, or decommissioning activities of Alternatives 1, 2, or 3. Should any ground disturbance occur during operations, the Applicant would follow the requirements of APM Paleo-1 and Paleo-2. Any areas disturbed during decommissioning would have already been disturbed during construction, so it is unlikely that additional undiscovered resources would be present. In addition, the requirements of APM Paleo-1 and Paleo-2 would also apply to decommissioning. Accordingly, the impact of Alternatives 1, 2, and 3 would be less than significant.

4.13.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.13 would be maintained. Alternative 4 would cause no adverse impact to paleontological resources.

However, the potential benefits associated with the discovery, study, and preservation of paleontological resources that could occur as a result of the Project would not be realized.

4.13.6 Cumulative Impacts

All of the past, present, and reasonably foreseeable future projects discussed in Tables 4.1-1 and 4.1-2 are primarily located on the same Holocene alluvium, Pleistocene alluvium, and dry desert washes as the DQSP. Therefore, all of the projects are considered within the geographic scope of analysis with respect to cumulative impacts on paleontological resources. Because paleontological resources are non-renewable, the temporal scope of the potential cumulative impacts is permanent.

Alternative 1 – Proposed Action

Construction

Ground disturbance associated with construction of individual projects in the cumulative scenario, if not properly mitigated, could combine to cause a cumulative loss of scientific information through disturbance or destruction of potentially significant fossil resources. Cumulative impacts to paleontological resources include the loss of non-recoverable scientifically important fossils and associated data, and the incremental loss to science and society of these resources over time.

In general, the cumulative projects are expected to have a minor adverse impact on paleontological resources, because of the volume of ground disturbance as compared to the overall volume of potentially fossil-bearing sediments. If all of the projects in the cumulative scenario were to be implemented, the resulting area of ground disturbance could amount to as much as 316,675 acres, 225,000 of which would be for the purpose of renewable energy development. The contribution of the Project to this total would be 3,831 acres, or about one percent of the total land area. Although the total land area occupied by the cumulative projects represents a considerable amount of land, there are approximately 1,544,000 acres of land underlain by Quaternary geologic units within eastern Riverside County. Even if all projects were implemented and were in operation at the same time, over 1,200,000 acres would remain undisturbed. The impact on the basis of volume results in even less of an impact. Ground disturbance associated with each project is expected to be limited to less than 10 feet, and would probably be limited to less than 3 feet across most of the Project area. This depth is negligible compared to the overall thickness of potentially fossil-bearing sediments in the area.

Implementation of APMs, such as Paleo-1 and Paleo-2, would be implemented as part of the DQSP, and would also be implemented as part of many of the cumulative projects, including most of the future projects. These APMs would substantially reduce the cumulative effects of such projects on paleontological resources, and resulted in the beneficial cumulative effect of making any discovered fossils available for scientific research and education by placing them in museum collections. The cumulative projects would also comply with Riverside County regulations and the proposed guidelines of the Society of Vertebrate Paleontology. Therefore, the Project would not adversely affect paleontological resources under NEPA or contribute to significant cumulative paleontological resource impacts under CEQA (impact PALEO-1).

Operation and Decommissioning

Operation of the cumulative projects would generally not involve ground disturbance, and thus would not contribute to cumulative impacts to paleontological resources. Decommissioning of the projects may involve ground disturbance, but only in areas that had previously been disturbed during construction. As with construction, implementation of APMs and compliance with Riverside County regulations and the proposed guidelines of the Society of Vertebrate Paleontology would be required as part of decommissioning. Therefore, no cumulative impacts would be expected as part of the operation and decommissioning of the cumulative projects.

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 2 to cumulative impacts to paleontological resources would be the same as the Proposed Action. Therefore, Alternative 2 would not adversely affect paleontological resources under NEPA or contribute to significant cumulative paleontological resource impacts under CEQA.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 3 to cumulative impacts to paleontological resources would be lower than the Proposed Action, due to the reduced acreage of ground disturbance on the old terrace deposits (Qot), which have a Very High potential for discovery of unknown significant paleontological resources. Therefore, Alternative 3 would not adversely affect paleontological resources under NEPA or contribute to significant cumulative paleontological resource impacts under CEQA.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. Alternative 4 would not contribute to cumulative impacts to paleontological resources.

4.13.7 Residual Impacts

Unavoidable adverse impacts to paleontological resources could occur after mitigation measures were implemented because resources could be destroyed or dislocated during construction. However, implementation of mitigation measures (MM PAL-1 through MM PAL-8) would minimize these impacts because they would ensure that destruction would not occur, or would occur alongside an appropriate program of study. Mitigation measures would also result in a beneficial increase in knowledge related to the science of paleontology. Fossils that would not otherwise have been found would be recovered, identified, studied, and preserved. The information gained from these discoveries would further scientific knowledge of the nature and depths of subsurface geological units in the region. This expansion of knowledge would also benefit society because fossils would be stored at museums for educational use.

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4.14 Recreation and Public Access

4.14.1 Methodology for Analysis

The analysis of the Proposed Action and alternatives assesses the impacts to land acreage as well as types of known recreational uses including hiking, backpacking and long-term camping in established Federal, state, or local recreation areas and/or wilderness areas. The CDCA Plan recognizes that the California Desert is "a reservoir of open space and as a place for outdoor recreation." The CDCA Plan notes that the diverse landscape of the California desert provides for a variety of physical settings. Further, the CDCA Plan identifies the wide variety of desert recreation uses, ranging from off-road vehicles to outdoor preservationists, and the increasing challenge to accommodate these varied and sometimes competing uses. For example, LTVA visitors typically enjoy backcountry vehicle touring on routes and washes and in the surrounding areas and would therefore be affected by the closures of open vehicle routes in the vicinity of the Project. The CDCA Plan and NECO Plan Amendment to the CDCA Plan, which includes a detailed inventory and designation of open routes in the vicinity of the Project, were reviewed to determine impacts to open routes.

Under the DRECP, land use allocations under the CDCA Plan were changed. The new land use allocations included designation of Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs). As an application in the Riverside East SEZ filed before June 30, 2009, the DQSP is not, and will not be, subject to the terms of the DRECP. See section II.3.3.3.5 and page II.3-126 of the DRECP. In addition, the analysis of the Project in this PA/EIS/EIR is based on the land use designations and visual resource classifications that were in effect on March 6, 2015, the date of the NOI, which do not include SRMAs and ERMAs. A discussion of the differences between the CDCA Plan and the DRECP land use allocations, and their effect on the analysis of the Project in this PA/EIS/EIR, is presented in Appendix E.

4.14.1.1 CEQA Significance Criteria

The criteria used to determine the significance of potential recreation and public access impacts are based on Appendix G of the state CEQA Guidelines. The Project would result in a significant impact under CEQA related to recreation if it would:

REC-1) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

REC-2) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

The following additional significance criterion from the County of Riverside CEQA Environmental Assessment Form is used in the analysis. A project could have potentially significant impacts if it would be:

REC-3) Located within a Community Service Area (CSA) or recreation and park district with a Community Parks and Recreation Plan (Quimby fees).

4.14.2 Applicant-Proposed Measures

There are no APMs proposed to address potential effects to recreation and public access.

4.14.3 Direct and Indirect Impacts

4.14.3.1 Alternative 1: Proposed Action

Onsite Recreation and OHV Use

Construction and Decommissioning

During construction and decommissioning of the gen-tie line near the SCE CRSS, temporary closure of route 660703, which is along an existing transmission line, may be necessary to pull and string the gen-tie line, which crosses this route. Operation and maintenance of the gen-tie line may also periodically necessitate the temporary closure of this route. Route 660703 is an open route of travel. Temporary closure of the route would affect OHV access for recreationists. To reduce temporary impacts to current users, Mitigation Measure REC-2 would require the Applicant to coordinate with BLM to temporarily close route 660703 if needed during construction and/or maintenance of the gen-tie line, and to post a public notice of the temporary route closure. Use of route 660703 would temporarily be displaced to nearby routes. Route 660703 closure would be temporary, and OHV users would be impacted by the temporary displacement of use.

All Phases

Once construction begins, BLM lands within the Project area would become inaccessible for all recreational uses until after decommissioning. Development of the Project would remove 3,616 acres from public recreation use and close 6.8 miles of routes of travel until after decommissioning, resulting in long-term impacts to public access and recreation. Recreationists would no longer be able to utilize the Project site for dispersed recreational opportunities during construction, operation, maintenance, and decommissioning.

When construction begins, the Project area will be fenced off and 6.8 miles of open OHV routes will be closed to public use throughout the duration of the Project. Development of the Project would remove six OHV routes from public recreation use until after decommissioning, resulting in long-term impacts to public access and recreation. These routes include all or portions of routes 660862, 660863, 660866, 661092, 661102, and 661501. Three of these routes provide access to the private property inholding (660862, 660866, and 661501) within the Project area and three routes provide access to the Mule Mountains (660863, 661092, and 661102). Access to the private property inholding would no longer be necessary with the Project and there are alternative routes to the east and south of the Project area that provide access to the Mule Mountains. Mitigation Measure REC-1 would require announcement of the closure of these routes to the public at various nearby BLM recreation facilities to reduce the likelihood of decreased recreation experience quality due to unknown route closures and redirection to open routes. With the closure of the three routes that access the Mule Mountains, use of these routes would be displaced to other nearby routes that provide similar access. The alternative access route to the Mule Mountains ACEC is shown on Figure 3.14-3. This access would become from 22nd Avenue to Gravel Pit Road, west on an unpaved extension of 24th Avenue, north on existing open route 660683, and then southwest on route 661093 to the ACEC. Due to the displacement

of users of projected closed routes, the project will create increase of surface impact on the routes and require more scheduled maintenance. To ensure that this alternative access is accessible and known to persons wishing to access the area, Mitigation Measure REC-1 requires that the Applicant perform light clearing and grading prior to Project construction, and then periodically as needed during construction, operations, and decommissioning.

For all phases of the Project, activity at the site and installation of a new industrial feature could attract OHV users in the surrounding viewshed to the site boundary via designated OHV open routes or over land. This could increase the opportunities for vandalism, illegal cross-country use, and other disruptive behavior. However, this risk is estimated to very low given the presence of existing solar projects in the area, low use of the routes within the Project vicinity, and availability of several existing OHV routes in the area.

Any recreationists displaced from the Project site would likely visit nearby recreation areas, thus leading to additional recreation use in other areas and corresponding impacts (noise, crowding, wildlife displacement, etc.). There are no specifically known resources or deposits that attract rockhounding onsite. Given that use of the Project site is likely very low, and therefore there would be very little displacement, impacts from additional use would be minimal.

After decommissioning, recreational users would experience a beneficial impact as the site would be restored to its natural undeveloped state and it would be available for recreational use. The primary access routes of travel 660862 and 660863 closed by the Project, trending south from the Nichols Warm Springs exit on Interstate 10, would be re-established after decommissioning, thus re-establishing access from Interstate 10 to the Mule Mountain ACEC.

Offsite Recreation

Construction and Decommissioning

It is anticipated that some construction workers may need to reside in RV campers at the Mule Mountain and Midland LTVAs in California and possibly the La Posa LTVA south of Quartzsite in Arizona, or camp on public lands in the vicinity of the Project site during the construction phase of the Project. Although the BLM offers developed campgrounds within commuting distance of the Project (Coon Hollow and Wiley's Well Campgrounds), only the LTVAs allow long-term camping, which would be more conducive to a 25-48 month construction period. The Midland and Mule Mountains LTVAs allow camping up to 7 months (September 15 to April 15) with purchase of a long-term permit, otherwise camping is allowed for up to 14 days with purchase of a short-term permit (BLM 2015). However, the short-term permit is intended for recreational uses and not for construction housing. The applicant would need additional authorization from the BLM to allow use of the LTVA for construction housing. Between April 15 and September 15, there is no trash pick-up and toilets are closed. Because construction and decommissioning would occur year round, workers may choose to use the LTVAs during any season. Although the number of workers who may choose to use LTVAs cannot be estimated, the maximum number of construction workers present in the area would be 850.

The presence of a large number of construction workers at the LTVAs could affect the recreation experience for users of the LTVAs by reducing spacing between campers and decreasing solitude. This reduction in recreation experience quality could displace some seasonal long-term visitors to other LTVAs in Arizona or Imperial County, thus increasing crowding at these already popular sites and thus reducing the quality of the recreation experience for users of these

other LVTAs. If there is significant use of the LTVAs by construction workers, BLM may need to increase law enforcement patrols at the LTVAs, reducing patrols on public lands elsewhere.

Use of the LTVAs by a large number of construction workers could also affect the physical infrastructure of the LTVAs. However, the LTVAs contain minimal facilities because campers must use self-contained RVs and there are no assigned or designated sites, except at the Wiley's Well and Coon Hollow Campgrounds within the Mule Mountain LTVA. Except for the designated campsites at Wiley's Well and Coon Hollow, each LTVA can accommodate several hundred RV units with a minimum distance of 15 feet between units, which is far beyond the existing level of use.

The temporary increase in demand for accommodations during construction that might be caused by an influx of workers and the resulting potential impact on LTVAs and other nearby recreation areas would be reduced by Mitigation Measure REC-3. REC-3 requires the Applicant to encourage workers to utilize local housing opportunities or private RV parks in Blythe and other nearby communities instead of public lands, and to seek additional authorization from BLM for use of the LTVAs.

All Phases

The Mule Mountains ACEC is one mile from the Project site and as discussed in Section 4.12, *Noise*, construction noise would attenuate such that the sound would be barely audible to recreational users in the ACEC. As discussed in Section 4.2, *Air Resources*, construction, operation, maintenance, and decommissioning activities could generate dust in the form of PM_{10} and $PM_{2.5}$. However, the worst-case $PM_{2.5}$ and PM_{10} impacts would occur at the fence line and drop off quickly with distance and thus would not affect recreationists in the ACEC. Other nearby BLM recreation areas are more than four miles away, and therefore would not be impacted by noise and/or dust created by construction, operation, maintenance, and decommissioning activities.

The Mule Mountains LTVA is located about 8.3 miles southwest of the Project site. Visitors camping at this LTVA are seeking opportunities for recreation experiences with similar users in a semi-primitive environment. Due to the distance of the LTVA from the Project site, there would be no impact to campers from noise and/or dust created by construction, operation, maintenance, and decommissioning activities.

Although it is possible that unauthorized use of LTVAs could occur when they are closed from April 16 to September 14, such use would be unlikely because this area experiences extremely hot weather during the closed season. However, it is likely there would be additional use during the shoulder season from April to May and September to October.

Regional and Local Recreation Resources

Due to the location of regional and local recreational facilities throughout the region, there would be no impact to users of these facilities from noise and/or dust created by construction, operation, maintenance, and decommissioning activities.

Impacts to the regional parks that provide camping (Mayflower Park, Riviera Marina Park, McIntyre Park, and Palo Verde Park) would be similar to impacts described above for LVTAs. In addition, depending on the number of construction workers using the camping facilities at

these parks, the availability of, and recreation experiences related to, other non-camping recreation uses at these parks could be affected due to increased demand.

DRECP

Under the DRECP, an area south of the Project area, north of the Palo Verde Mountains Wilderness, designated as a SRMA. However, the Project area itself is not located within or adjacent to the SRMA and would not impact recreation within the SRMA.

4.14.3.2 Alternative 2: Resource Avoidance Alternative

The type of impact of Alternative 2 on onsite recreational opportunities would be the same as for the Proposed Action. However, the onsite acreage affected would be reduced from that of the Proposed Action. Development of Alternative 2 would remove 2,622 acres from public recreation use and close 6.8 miles of routes of travel until after decommissioning, resulting in long-term impacts to public access and recreation.

Similar to the Proposed Action, construction and decommissioning of the gen-tie line for Alternative 2 would require the temporary closure of route 660703, and operation and maintenance of the gen-tie line may periodically require temporary closure of this route. Mitigation Measure REC-2, which would require the Applicant to coordinate with BLM to temporarily close route 660703 if needed during construction and/or maintenance of the gen-tie line, would apply under Alternative 2.

Construction, operation, and maintenance of Alternative 2 would require closure of 6.8 miles of open routes to public use throughout the duration of the Project. The routes which would be affected are the same as those affected by the Proposed Action, including all or portions of routes 660862, 660863, 660866, 661092, 661102, and 661501. Although Alternative 2 would involve a smaller amount of acreage than the Proposed Action, the areas which be disturbed would include at least a portion of all of these routes, so would require the same closures as would be required under the Proposed Action. Mitigation Measure REC-1, which requires announcement of the closure of these routes to the public at various nearby BLM recreation facilities, would apply to Alternative 2. For all phases of Alternative 2, activity at the site and installation of a new industrial feature could attract OHV users in the surrounding viewshed to the site boundary via designated OHV open routes or over land. This could increase the opportunities for vandalism, illegal cross-country use, and other disruptive behavior.

The impacts of construction and decommissioning workers of Alternative 2 on offsite recreation would be the same as those of the Proposed Action. The total number of workers would be the same for both alternatives, although the duration of construction and decommissioning may be shorter for Alternative 2. Similar to the Proposed Action, use of LTVAs by construction and/or decommissioning workers could impact the recreation experience for users of the LTVAs, and could also impact the physical infrastructure of the LTVAs.

The impacts of air emissions and noise from Alternative 2 on nearby recreation areas would be approximately the same as for the Proposed Action. Alternative 2 would be approximately the same distance from the Mule Mountains ACEC, and would have approximately the same peak level air emissions and noise.

4.14.3.3 Alternative 3: Reduced Project Alternative

The type of impact of Alternative 3 on onsite recreational opportunities would be the same as for the Proposed Action. However, the onsite acreage affected would be reduced from that of the Proposed Action. Development of Alternative 3 would remove 1,887 acres from public recreation use and close 6.5 miles of routes of travel until after decommissioning, resulting in long-term impacts to public access and recreation.

Similar to the Proposed Action, construction and decommissioning of the gen-tie line for Alternative 3 would also require the temporary closure of route 660703, and operation and maintenance of the gen-tie line may periodically require temporary closure of this route. Mitigation Measure REC-2, which would require the Applicant to coordinate with BLM to temporarily close route 660703 if needed during construction and/or maintenance of the gen-tie line, would apply under Alternative 3.

Construction, operation, and maintenance of Alternative 3 would require closure of 6.5 miles of open routes to public use throughout the duration of the Project. The routes which would be affected are the same as those affected by the Proposed Action and Alternative 2, including all or portions of routes 660862, 660863, 660866, 661092, 661102, and 661501. Although Alternative 3 would involve a smaller amount of acreage than the Proposed Action, the areas which be disturbed would include at least a portion of all of these routes, so would require the same closures as would be required under the Proposed Action. Mitigation Measure REC-1, which requires announcement of the closure of these routes to the public at various nearby BLM recreation facilities, would apply to Alternative 3. For all phases of Alternative 3, activity at the site and installation of a new industrial feature could attract OHV users in the surrounding viewshed to the site boundary via designated OHV open routes or over land. This could increase the opportunities for vandalism, illegal cross-country use, and other disruptive behavior.

The impacts of construction and decommissioning workers of Alternative 3 on offsite recreation would be the same as those of the Proposed Action and Alternative 2. The total number of workers would be the same for all three action alternatives, although the duration of construction and decommissioning may be shorter for Alternative 3. Similar to the Proposed Action, use of LTVAs by construction and/or decommissioning workers could impact the recreation experience for users of the LTVAs, and could also impact the physical infrastructure of the LTVAs.

The impacts of air emissions and noise from Alternative 3 on nearby recreation areas would be approximately the same as for the Proposed Action and Alternative 2. Alternative 3 would be approximately the same distance from the Mule Mountains ACEC, and would have approximately the same peak level air emissions and noise.

4.14.4 Application of CEQA Significance Thresholds

The DQSP would not include any recreational facilities, but would result in a temporary increase in population associated with construction, which would have a peak workforce of 810 employees. The presence of these workers for the 25 to 48 month long construction Project could affect use of recreation facilities in the region, although not to the point where substantial deterioration of the facilities would occur. Therefore, impacts would be considered less than significant during construction, operation, maintenance, and decommissioning.

REC-1) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Alternatives 1, 2, and 3 would not involve the use of existing neighborhood or regional parks, or other recreational facilities. However, during construction and decommissioning of any of the action alternatives, there would be a temporary increase in population that may utilize existing recreational facilities in the Project vicinity. As described in Section 4.15, *Social and Economic Effects*, it is assumed that most construction workers would utilize seasonal and vacation home rentals, which have high vacancy rates within the Project vicinity. It is unlikely that the additional workers would be concentrated in a single location, and therefore no one recreation facility would receive an increased level of use that would lead to the substantial physical deterioration of the facility.

Closure of the current access routes to the Mule Mountains could result in increased use, and therefore degradation, of the alternative access roads south and west of the Project area. To ensure that this alternative access is accessible and known to persons wishing to access the area, Mitigation Measure REC-1 requires that the Applicant perform light clearing and grading prior to Project construction, and then periodically as needed during construction, operations, and decommissioning.

The temporary use of LTVAs by construction and decommissioning workers for Alternatives 1, 2, or 3 may result in physical deterioration of the facilities. Both Wiley Well and Coon Hollow LTVAs have limited water available, and it is unlikely the LTVAs can accommodate significantly higher water use by Project employees. The LTVAs include only minimal facilities because campers must use self-contained RVs, and the LTVAs may not have the capability to accommodate significantly more water use than they currently experience. Excessive use may accelerate physical deterioration of recreational facilities such as toilets and tables, and may disrupt the experience of solitude the LTVA campers seek. Excessive use could also lead to deterioration of Wiley's Well Road, which is unpaved and maintained by Riverside County after significant rainstorms. The current motorized vehicle use creates washboards and blow-outs, making the road difficult for motorhome and trailer travel. Increased travel on the road by Project workers may make the road inaccessible to visitor's camping vehicles. Therefore, impacts to LTVAs as a result of use by workers may be significant.

During operation, the number of employees for Alternatives 1, 2, or 3 would be minimal (approximately five), and any potential impact on recreational facilities would be negligible. The five permanent workers are not expected to use temporary housing in the LTVAs. No impact would occur.

Mitigation Measure REC-1 would ensure that the alternative access roads to recreational areas in the Mule Mountains would remain accessible. Mitigation Measure REC-3 would require the Applicant to encourage workers to utilize local housing opportunities or private RV parks in nearby communities instead of public lands, and to coordinate with the County to address any deterioration in the condition of the access roads. REC-3 would also require that the workers supply their own potable water, limiting the impact on the limited water available at the LTVAs. With monitoring of impacts and corrective actions associated with Mitigation Measures REC-1 and REC-3, impacts would be reduced to less than significant for Alternatives 1, 2, or 3.

REC-2) Would the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Alternatives 1, 2, and 3 would not include any recreational facilities. These alternatives would result in negligible long-term increases in population. As a result, these alternatives would not require the construction or expansion of recreational facilities. No impacts would occur.

REC-3) Would the Project be located within a Community Service Area or recreation and park district with a Community Parks and Recreation Plan (Quimby fees)?

Alternatives 1, 2, and 3 would not be within a Community Service Area and would not include recreational facilities. These alternatives would not add significantly to the local population necessitating the construction or expansion of recreational facilities or cause or accelerate physical deterioration of recreational facilities. No impacts would occur.

4.14.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.14 would be maintained. The Project site would remain available for recreational uses, and the existing open routes would remain open for public use. No workers would be brought to the area, so there would be no increase of use of existing recreational facilities. There would be no air emissions or noise that would affect nearby recreation areas. Therefore, Alternative 4 would not result in any impacts to recreation resources.

4.14.6 Cumulative Impacts

The geographic scope of impacts to onsite recreational resources and OHV routes associated with the cumulative projects is eastern Riverside County. The geographic scope for increased use of LTVAs and other offsite recreational facilities by workers is Blythe and the other nearby communities which are expected to house the workers. The geographic scope of impacts from Project-related air emissions or noise to offsite recreational resources in LTVAs, parks, ACECs, and other recreation areas is limited to the immediate vicinity of each area, in which emissions or noise from one or more cumulative projects could combine to degrade the recreational qualities of that area. The temporal scope for these impacts is the duration of construction, operation, and decommissioning of the Project.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 4.1. Among them, projects that also would be developed wholly or partially on lands designated as MUC-M would restrict recreational opportunities within that

classification for the duration of those projects. These projects include Palen Solar, Genesis Solar, Desert Sunlight, Desert Harvest, and RE Crimson. Each of these projects would occupy land area which would otherwise have been available for recreation and OHV use. Upon the beginning of construction for each project, and continuing through decommissioning, each of these projects would eliminate use of the land area for recreational purposes. The displacement of dispersed recreation from the Project site and other projects' development footprints could reduce the availability of short-term recreational uses for other visitors to the area. The Proposed Action would occupy approximately 3,616 acres, and the other MUC-M projects would occupy approximately 25,000 acres, for a total of approximately 28,600 acres. Of the total MUC-M and MUC-L lands in eastern Riverside County, the Proposed Action represents less than 1 percent, with a total cumulative effect of approximately 3 percent. Since more than 900,000 acres of MUC-M and MUC-L lands in eastern Riverside County would remain available for recreation, and upon completion of decommissioning these lands would again become available for recreation, no cumulative impact would result from the contribution of the Proposed Action to the impact of the past, present, and reasonably foreseeable future projects.

Each of the cumulative projects would also result in the closure of OHV open routes in the California Desert. The closures would have an adverse effect on the availability of OHV routes for recreational uses, and may result in some users seeking out other areas, legally or illegally, for their activities and experiences. In general, implementation of each project would include replacement of closed routes with other routes, so that public access to specific locations is not eliminated. However, the overall size of the network available for OHV recreation would be reduced. The effect of the overall cumulative past, present, and reasonably foreseeable projects in eastern Riverside County, in combination with the closure of OHV routes by the Proposed Action, would adversely affect OHV open routes through closures, rerouting, and use restrictions. Decommissioning activities would make these lands available for OHV opportunities, if BLM chooses to re-develop and re-open designated routes.

The Project's incremental contribution to temporary, construction-related impacts to OHV routes would be reduced through implementation of Mitigation Measures REC-1 and REC-2. Mitigation Measure REC-1 would require announcement of the closure of OHV routes to the public at various nearby BLM recreation facilities to reduce the likelihood of decreased recreation experience quality due to unknown route closures and redirection to open routes. Mitigation Measures REC-2 requires coordination of temporary closure of OHV routes during construction with the BLM.

It is anticipated that construction or decommissioning workers for the Project could reside in RV campers at the Mule Mountain and Midland LTVAs in California and the La Posa LTVA south of Quartzsite in Arizona. Each LTVA can accommodate several hundred RV units, and current use is much lower than capacity. Other projects in the cumulative scenario would also result in an influx of construction workers who may choose to reside in LTVAs during the permitted season. Impacts to LTVAs from maximum authorized use by construction workers would be to reduce the availability of these areas to recreational campers. This would have an adverse impact on the social and recreation experience of winter users, as well as to the potential need for increased law enforcement patrols, reducing the available patrols for other public lands. Implementation of Mitigation Measure REC-3 would require the Applicant to encourage workers to utilize local housing or private RV parks, and to seek additional authorization from BLM for use of the LTVAs, thus reducing the Project's contribution to these cumulative impacts.

The cumulative projects could potentially impact recreational facilities and/or the recreational experience for other visitors if the influx of project workers substantially increases demand for use of local or regional parks, LTVAs, and other specific recreational areas. The cumulative projects are not expected to individually result in substantial adverse impacts to recreation. Although each of the projects would potentially increase local populations and demand for recreation during their construction phases, this increase would likely be temporary for each project, and would also probably not overlap for all projects during the same time period. Because construction of each of the projects would be temporary, and the size of the operational workforces would be nominal, the cumulative projects are not expected to induce substantial growth to the regional population levels. As such, the cumulative effect on recreational facilities would be nominal, and cumulative impacts would be less than significant (impact REC-1).

Each of the cumulative projects could also potentially impact the recreational experience for other visitors if they were to generate air emissions or noise in the vicinity of local or regional parks, LTVAs, and other specific recreational areas. The ability of each individual project to have such an impact would decrease with distance away from the project, so only projects within a very limited area around each individual recreation area could combine to create a cumulative impact to that area. As discussed in Section 4.14.3.1, air emissions and noise from the Project are not expected to be noticeable in the closest recreation area, which is the Mule Mountains ACEC. Two other local projects, the RE Crimson Solar facility and the Mule Mountain III Solar facility, would be located near the ACEC, and may contribute air emissions and noise which could impact that area. However, the incremental contribution of the Proposed Action to that impact would not be noticeable.

The Project would not require construction of recreation facilities (impact REC-2), and would not be located in a Community Service Area or recreation and park district with a Community Parks and Recreation Plan (impact REC-3).

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 2 to cumulative impacts to recreation would be approximately the same as the Proposed Action. Alternative 2 would occupy approximately 2,622 acres, and the other MUC-M projects would occupy approximately 25,000 acres, for a total of approximately 27,622 acres. Of the total MUC-M and MUC-L lands in eastern Riverside County, Alternative 2 represents less than 1 percent, with a total cumulative effect of approximately 3 percent. Since more than 900,000 acres of MUC-M and MUC-L lands in eastern Riverside County would remain available for recreation, and upon completion of decommissioning these lands would again become available for recreation, no significant cumulative impact would result from the contribution of Alternative 2 to the impact of the past, present, and reasonably foreseeable future projects. Mitigation Measure REC-1 would require announcement of the closure of these routes to the public at various nearby BLM recreation facilities to reduce the likelihood of decreased recreation experience quality due to unknown route closures and redirection to open routes. Mitigation Measure REC-2 would require the Applicant to coordinate short-term closures during construction with BLM.

The contribution of Alternative 2 to other cumulative impacts to recreation, including OHV routes, LTVAs, ACECs, and other local or regional parks, would be the same as those described

for the Proposed Action. Mitigation Measure REC-3 would require the Applicant to encourage workers to utilize local housing or private RV parks, and to seek additional authorization from BLM for use of the LTVAs, reducing potential impacts associated with use of the LTVAs for housing workers.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The contribution of Alternative 3 to cumulative impacts to recreation would be approximately the same as the Proposed Action. Alternative 3 would occupy approximately 1,887 acres, and the other MUC-M projects would occupy approximately 25,000 acres, for a total of approximately 26,887 acres. Of the total MUC-M and MUC-L lands in eastern Riverside County, Alternative 3 represents less than 1 percent, with a total cumulative effect of approximately 3 percent. Since more than 900,000 acres of MUC-M and MUC-L lands in eastern Riverside County would remain available for recreation, and upon completion of decommissioning these lands would again become available for recreation, no significant cumulative impact would result from the contribution of Alternative 3 to the impact of the past, present, and reasonably foreseeable future projects. Mitigation Measure REC-1 would require announcement of the closure of these routes to the public at various nearby BLM recreation facilities to reduce the likelihood of decreased recreation experience quality due to unknown route closures and redirection to open routes. Mitigation Measure REC-2 would require the Applicant to coordinate short-term closures during construction with BLM.

The contribution of Alternative 3 to other cumulative impacts to recreation, including OHV routes, LTVAs, ACECs, and other local or regional parks, would be the same as those described for the Proposed Action. Mitigation Measure REC-3 would require the Applicant to encourage workers to utilize local housing or private RV parks, and to seek additional authorization from BLM for use of the LTVAs, reducing potential impacts associated with use of the LTVAs for housing workers.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. There would be no occupation of land area which would interfere with current recreational uses or OHV routes, no use of recreational facilities by workers, and no air emissions or noise which could affect recreational experiences. Therefore, the No Action Alternative would not contribute to cumulative recreation impacts.

4.14.7 Residual Impacts

Following implementation of mitigation measures, all adverse impacts on recreation and OHV access resulting from construction, operations and maintenance, and decommissioning of the Project and alternatives would be avoided or substantially reduced.

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4.15 Social and Economic Effects

4.15.1 Methodology for Analysis

The CEQ's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR Parts 1500-1508; reprinted in CEQ, 2005) provides guidelines for addressing social and economic effects in preparing an environmental impact statement. Section 1508.14 of these regulations states that:

> "Human environment" shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. . . . This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.

In §1508.8(b), the regulations state that indirect effects of an action "may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."

Consistent with these regulations, the analysis of socioeconomic impacts includes examination of impacts of the Project and alternatives with respect to the following issues:

1. Housing availability and the character of local communities that may result from employment of workers for the construction, operation, and decommissioning;
2. Employment and economy of Riverside County from spending and employment; and
3. Revenues of the County government which would provide local public services.

The analysis of potential socioeconomic effects of the Proposed Action and alternatives takes place in the context of physical effects related to population and housing. An input-output model (IMPLAN) was used to estimate the indirect and induced economic impacts from construction operation, maintenance, and decommissioning of the DQSP.

4.15.1.1 CEQA Significance Criteria

The criteria used to determine the significance of the Project-related socioeconomic impacts are based on the criteria identified in the state CEQA Guidelines, Appendix G. Project-related impacts would be considered significant if they:

SOC-1) Induce substantial population growth in an area, either directly or indirectly.

SOC-2) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

SOC-3) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

The following additional significance criteria from the County of Riverside Environmental Assessment form are used in the analysis. A project could have potentially significant impacts if it would:

SOC-4) Create a demand for additional housing, particularly housing affordable to households earning 80% or less of the County's median income.

SOC-5) Affect a County Redevelopment Project Area.

SOC-6) Cumulatively exceed official regional or local population projections.

4.15.2 Applicant-Proposed Measures

There are no APMs to address potential social and economic effects.

4.15.3 Direct and Indirect Impacts

4.15.3.1 Alternative 1: Proposed Action

Construction

Housing and Community

Construction employment and spending for the Project is the primary mechanism by which the DQSP would cause a socioeconomic impact. Construction would be temporary and is expected to last for a maximum of 48 months. Given the absence of existing significant economic uses of the site, Project construction would not displace any current economic activity. As discussed in Section 3.15, *Social and Economic Setting*, the location of construction workers is a key factor determining the extent of potential impacts to the local economy and communities. Income from employment primarily would benefit the communities in which the construction workers and their families reside because this is where most household expenditures occur. Also, the distance between workers' residences and the DQSP site would affect the choice of transportation and decision on whether to engage in "weekly commuting" or other forms of temporary relocation while working on the Project.

The number of construction workers on-site would be a maximum of 810, with an average workforce of 450 workers. Most construction workers are expected to come from western Riverside County, where, along with San Bernardino County, a substantial number of workers in relevant occupations reside (over 159,000 workers; Table 3.15-7). It is possible, however, that some workers will come from Imperial County, La Paz County, or Maricopa County.

With the exception of eastern Coachella Valley, most of western Riverside County is two hours or more travel time away from the Project site (see Figure 3.15-1). Since construction is a temporary assignment, it is not expected that workers from outside the Blythe area would relocate to Blythe permanently in order to work at the Project site. Data reviewed in Section 3.15.1 also indicate that some workers may engage in "weekly commuting," in which they find temporary or transient housing closer to the jobsite during the workweek. It is expected that such workers would seek temporary housing in the Blythe area, where both rental housing as well as a large number of hotel or motel rooms would be available.

According to the 2009-2013 American Community Survey, there were 196 housing units for rent in the City of Blythe and an additional 60 units in the nearby communities of Ehrenberg and Mesa Verde (Table 3.15-2). As indicated in Section 3.15, there are more than 1,000 hotel rooms in Blythe, four additional hotels in Ehrenburg and Quartzsite, and another 14,842 hotel rooms within a 1 to 2 hour drive. In addition, there are numerous RV facilities, mobile home sites, and campgrounds in Blythe and surrounding areas, which could provide alternative forms of

temporary housing. Thus, there would be a sufficient supply of temporary housing options to accommodate workers who may seek temporary housing near the jobsite.

Regional Employment and Economy

With unemployment rates of 6.3 percent in Riverside County and 8.2 percent in La Paz County (September 2015), employment of workers for Project construction would have a beneficial effect in helping to reduce unemployment.

Project construction would create a temporary, positive impact on the local economic base and fiscal resources. Construction employment wages and salaries would provide additional income to the area, as would expenditures within Riverside County for construction materials and services. The Project construction payroll has been estimated at approximately $80 million a year. Capital expenditures and local spending on construction materials and equipment within Riverside Count is estimated to average $20 million annually. Project construction is expected to directly create an average of 450 annual full-time employees over 48 months, with a peak monthly employment of 800 full-time workers.

Employment and resulting labor income also would have beneficial effects in Riverside County as a whole. These are estimated using a regional input-output model of Riverside County's economy (MIG 2015). Starting with expenditures or employment for a given project, also called the *direct* impact, an input-output model represents major inter-industry (i.e., business-to-business) transactions in the region of interest, as well as transactions with households, government, and import/export with economies outside the region. Multipliers derived from the model can be used to estimate *indirect* impacts (business-to-business, or supplier, transactions following expenditures by a project) and *induced* impacts (expenditures by households of workers employed by the Project and by the chain of suppliers to the Project). The sum of direct, indirect, and induced impacts represents the total economic or employment impact to the region. For purposes of this analysis, Riverside County is the region of interest, since the majority of workers are expected to come from the County and Project-related direct impacts would occur in the County.

For the purpose of the input-output model, the following Project expenditures (rounded values) were assumed to be the Project expenditures that would benefit the Riverside economy: 1) estimated annual payroll ($800 million); 2) estimated annual local capital expenditures and materials ($10.4 million); and 3) estimated annual average employment (450 employees).

Based on these assumptions, the total estimated annual beneficial economic impacts from the 25 to 48-month construction phase within Riverside County would be $72.5 million, as shown in Table 4.15-1.

Table 4.15-1. Regional Employment and Income Impacts from Project Construction

Construction	Employment (Jobs)	Labor Income ($ Million)	Output ($ Million)
Direct Effect	450.0	80.0	20.0
Indirect Effect	32.1	1.2	3.9
Induced Effect	411.2	14.8	48.6
Total Effect	893.3	96.0	72.5

Table 4.15-1. Regional Employment and Income Impacts from Project Construction

Construction	Employment (Jobs)	Labor Income ($ Million)	Output ($ Million)

Note: Sector modeled is 54 Construction of new power and communication structures.
Region is Riverside County. Income and output are in 2014 dollars. Figures may not add to totals as shown due to rounding.
Source: MIG 2015

The top five industries that would benefit the most in terms of economic output impacts include: construction, real estate, limited-service restaurants, full-service restaurants, and individual and family services (e.g., activity centers, community social services).

Also, using the assumptions above during the construction phase, the Project's estimated annual job creation within the study area would be 893.3 positions (Table 4.15-1).

Riverside County Revenues

The economic benefits of increased income and employment would result in indirect and induced revenue, and potential expenditures in the surrounding counties; however, the precise distribution of labor force among these counties is not known. Because Riverside County would provide most of the local government services to the Project, such as police and fire protection, this analysis focuses on Riverside County.

During construction, the primary revenue source for the County would be the sales and use taxes levied on construction materials and supplies. The current sales tax rate applicable to unincorporated Riverside County is 8.0 percent, of which the County directly receives 1.5 percent, with 0.5 percent for the Riverside County Transportation Commission, 0.25 percent for County transportation funds, and 0.75 percent for County operations (California State Board of Equalization (BOE) 2013; BOE 2015a).

Sales and use taxes are levied on materials and supplies used for construction in the jurisdiction where the jobsite is located. For the Project, the principal materials subject to these taxes would be components of the solar energy generating system, including PV modules or panels, mounting and tracking systems, electrical components, inverters, and other materials. Based on data collected by National Renewable Energy Laboratory (NREL 2011), these components are estimated to cost $2,268 per kW.

The NREL cost estimate includes $1,598 per kW for solar PV modules (thin film), the most expensive component of the energy generating system. Other materials tabulated by the NREL cost estimate include mountings (rails, clamps, fittings, etc.), at $178 per kW; electrical materials (wire, connectors, breakers, etc.), at $202 per kW; and inverters, at $290 per kW. Based on these estimates, the total material cost for a 450 MW facility would be approximately $719 million. Sales tax revenues allocated to the County (1.5 percent) would be approximately $10.8 million.

The BOE generally distributes sales and use tax revenues from construction materials and supplies to local governments through a countywide pool, unless a special procedure is used to allocate all such revenues to the jurisdiction of the jobsite. Under the countywide pool, the unincorporated county would receive a percentage of the revenues, which varies by quarter according to sales and use taxes collected. In the third quarter of 2015, the County received 8.0 percent of the countywide pool (BOE 2015b). Under such an allocation, the County would receive about $864,000 in sales tax revenues from construction materials.

Operation and Maintenance

Housing and Community

Permanent operating staff for the Project would number approximately 5 workers. In contrast to construction employment, it is expected that these workers would be either hired locally or, if hired from outside the Blythe area, would relocate to the area. Due to the numbers of vacant homes for sale (62 units in the City of Blythe) or for rent (196 units in the city), there would be minimal impact to the local housing supply or the community, even if all permanent workers were to relocate to the Blythe area.

Regional Employment and Economy

The employment of 5 workers for operation and maintenance would not adversely affect the regional labor market with current (September 2015) unemployment rates of 6.3 percent in Riverside County and 8.2 percent in La Paz County, but instead would have a beneficial effect.

An input-output model was used to estimate economic impacts within Riverside County based on operation-phase Project expenditures that would benefit the local economies. For input-output analysis, it is assumed that the 5-person operating staff would consist of workers in the following industries: 3 workers in electric power generation and transmission and 2 workers in electronic and precision equipment maintenance. Annual expenditures were based on assumed values for Riverside County for these two industries. Payroll was estimated by the Applicant to be $500,000 annually.

Table 4.15-2 shows that total employment and economic impact in the County, including direct, indirect, and induced impacts, would be 10.7 workers, with total income impact of $0.7 million, and output impact of $3.0 million per year.

Table 4.15-2. Regional Employment and Income Impacts from Project Operation

Operation	Employment	Labor Income ($ Million)	Output ($ Million)
Direct Effect	5.0	0.5	2.3
Indirect Effect	2.6	0.1	0.3
Induced Effect	3.1	0.1	0.4
Total Effect	10.7	0.7	3.0

Note: Sectors modeled are 44 Electric Power Generation – Solar and 506 Electronic and Precision Equipment Repair and Maintenance.
Region is Riverside County. Income and output are in 2014 dollars. Figures may not add to totals as shown due to rounding.
Source: MIG 2015

Riverside County Revenues

Consistent with Board Policy No. B-29 regarding solar power plant payments, the solar power plant owner shall annually pay to the County a public benefit payment of $150 per acre for land involved in the power production process. This shall be done through a negotiated development agreement between the County and solar power plant owner. Additionally, the development agreement will contain terms requiring the solar power plant owner to take actions to ensure

allocation directly to the County of the sales and use taxes payable in connection with the construction of the solar power plant, to the maximum extent possible under the law. The estimated tax revenue to the County under the Proposed Action would be approximately $565,000 per year.

The largest improvement of the Project that would be subject to property taxation is the gen-tie line. Even when constructed on tax-exempt BLM land, private improvements such as the gen-tie line are taxable as possessory interest. The estimated length of this line, including both inside and outside the Project site boundaries, is 3.0 miles. The Applicant has not provided a cost estimate for the gen-tie line. However, an economic study of a similar solar PV energy project in Imperial County (Imperial County 2011) estimated that construction of a 5-mile gen-tie line over BLM land would cost $12.4 million, or approximately $2.48 million per mile. Based on this example, it is estimated that the taxable value of the proposed gen-tie line, excluding land, would be nearly $7.5 million.

The average rate of property taxation in the County in fiscal year (FY) 2013-14 was 1.158 percent, generating total taxes of approximately $2.4 billion (BOE 2014). This was distributed to the County, cities, schools, special districts, and other agencies. According to the Riverside County Assessor-County Clerk-Recorder's (ACR) office, property taxes distributed to local agencies in FY 2013-2014 totaled $2.2 billion, of which 7.1 percent went to cities, 11.2 percent to the County, and the remainder to other agencies (Riverside County 2015e).

For purposes of this analysis, it is assumed that the County would receive 18.3 percent of the 1.158 percent tax collected from the Project site. Estimated property tax revenue to the County from the gen-tie line thus would be approximately $15,800 per year.

Although it is likely that the Project would generate additional property tax revenues from onsite improvements not directly related to solar energy generation, no cost estimates are available for these improvements.

Decommissioning

After 30 years of operation, the Project would be decommissioned, with all equipment and improvements dismantled and removed from the site, and the site would be restored to an undeveloped condition. Decommissioning is expected to take up to a year to complete. As discussed in Section 2.3.6, the workforce required for decommissioning is expected to be approximately the same size as that required for construction.

Housing and Community

As in the case of Project construction, the temporary decommissioning workforce would likely come mostly from western Riverside County and a smaller number from the Blythe area and La Paz County. Although the size of the workforce would be approximately the same size as that for construction, the duration of decommissioning, about one year, would be shorter than that for construction. As a result, it is likely that a larger proportion of workers would commute, as opposed to relocating to the area. Therefore, although it is not possible to estimate the availability of rental properties and hotel accommodations that would be available in the area at that time, it is likely that the demand on those accommodations would be lower than that associated with Project construction.

Regional Employment and Economy

It is difficult to forecast employment conditions for 30 years into the future. Even if unemployment rates in Riverside and La Paz counties decline to lower levels, such as those projected for the near-term, demand for workers for decommissioning of the Project would not have an adverse impact on the regional or local labor market. Expenditures for decommissioning, including payments to workers, would have a beneficial effect on the regional economy. However, the linear input-output model of 2014 cannot be applied to the decommissioning work, since the regional economy undoubtedly will experience substantial changes in the intervening years.

Riverside County Revenues

No substantial sales or property tax revenues would be generated during or after decommissioning because the improvements which were the basis for the tax revenue would cease to exist.

4.15.3.2 Alternative 2: Resource Avoidance Alternative

Construction

The construction workforce for Alternative 2 is expected to be approximately the same as for the Proposed Action; therefore, there would be a sufficient supply of temporary housing options to accommodate workers who may seek temporary housing near the jobsite. Additionally, estimated impacts on regional employment, worker income, and the output of construction companies are the same as those shown in Table 4.15-1. Due to the reduced acreage, the duration of construction would be reduced incrementally from that of the Proposed Action, but the average and peak workforces would be similar to those of the Proposed Action. Therefore, impacts of construction of Alternative 2 would be similar to those of the Proposed Action, but would occur for a shorter timeframe.

The total material cost of Alternative 2 materials and supplies is also expected to be approximately the same as the Proposed Action. Therefore, the total estimated annual beneficial economic impacts from the construction phase within Riverside County would be $72.5 million, as shown in Table 4.15-1. Similarly, the Riverside County revenue would be the same as for the Proposed Action, or approximately $864,000.

Operation and Maintenance

Housing and Community

Permanent operating staff for Alternative 2 would be the same as for the Proposed Action, or approximately 5 workers. As with the Proposed Action, there would be minimal impact to the local housing supply or the community, even if all permanent workers were to relocate to the Blythe area.

Regional Employment and Economy

The employment of 5 workers for operation and maintenance for Alternative 2 would not adversely affect the regional labor market with current (September 2015) unemployment rates of

6.3 percent in Riverside County and 8.2 percent in La Paz County, but instead would have a beneficial effect.

The input-output model used to estimate economic impacts within Riverside County for the Proposed Action is also applicable to Alternative 2. Table 4.15-2 shows that total employment and economic impact, including direct, indirect, and induced impacts, would be 10.7 workers, with total income impact of $0.7 million, and output impact of $3.0 million per year.

Riverside County Revenues

Consistent with Board Policy No. B-29 regarding solar power plant payments, the solar power plant owner shall annually pay to the County a public benefit payment of $150 per acre of land involved in the power production process. This shall be done through a negotiated development agreement between the County and solar power plant owner. Additionally, the development agreement will contain terms requiring the solar power plant owner to take actions to ensure allocation directly to the County of the sales and use taxes payable in connection with the construction of the solar power plant, to the maximum extent possible under the law. The estimated tax revenue to the County under Alternative 2 would be $439,500 per year.

During operation and maintenance of Alternative 2, another revenue source for the County would be property tax revenue based on the private improvements of the gen-tie line. The estimated length of this line, including both inside and outside the Alternative 2 site boundaries, is 4.0 miles. The Applicant has not provided a cost estimate for the gen-tie line. However, an economic study of a similar solar PV energy project in Imperial County (Imperial County 2011) estimated that construction of a 5-mile gen-tie line over BLM land would cost $12.4 million, or approximately $2.48 million per mile. Based on this example, it is estimated that the taxable value of the proposed gen-tie line, excluding land, would be approximately $9.9 million. Using the assumption that the County would receive 18.3 percent of the 1.158 percent tax collected on the gen-tie line, the estimated property tax revenue to the County under Alternative 2 would be approximately $20,000 per year.

Although it is likely that Alternative 2 would generate additional property tax revenues from onsite improvements not directly related to solar energy generation, no cost estimates are available for these improvements.

Decommissioning

After 30 years of operation, Alternative 2 would be decommissioned, with all equipment and improvements dismantled and removed from the site, and the site would be restored to an undeveloped condition. Decommissioning is expected to take up to a year to complete, and is expected to require a workforce substantially smaller than that required for construction.

Housing and Community

As in the case of Alternative 2 construction, the temporary decommissioning workforce would likely come mostly from western Riverside County and a smaller number from the Blythe area and La Paz County. Many workers would likely commute to the site. For workers who choose to commute weekly and temporarily relocate to the Blythe area during the workweek, it is expected that sufficient numbers of rental properties and hotel and motel accommodations would be available in the area.

Regional Employment and Economy

It is difficult to forecast employment conditions for 30 years into the future. Even if unemployment rates in Riverside and La Paz counties decline to lower levels, such as those projected for the near-term, demand for workers for decommissioning of Alternative 2 would not have an adverse impact on the regional or local labor market. Expenditures for decommissioning, including payments to workers, would have a beneficial effect on the regional economy. However, the linear input-output model of 2014 cannot be applied to the decommissioning work, since the regional economy will experience substantial changes in the intervening years.

Riverside County Revenues

No substantial sales or property tax revenues would be generated during or after decommissioning because the improvements which were the basis for the tax revenue would cease to exist.

4.15.3.3 Alternative 3: Reduced Project Alternative

Construction

The construction workforce for Alternative 3 is expected to be approximately the same as for the Proposed Action; therefore, there would be a sufficient supply of temporary housing options to accommodate workers who may seek temporary housing near the jobsite. Additionally, estimated impacts on regional employment, worker income, and the output of construction companies are the same as those shown in Table 4.15-1. Due to the reduced acreage, the duration of construction would be reduced incrementally from that of the Proposed Action and of Alternative 2, but the average and peak workforces would be similar to those of the Proposed Action. Therefore, impacts of construction of Alternative 3 would be similar to those of the Proposed Action, but would occur for a shorter timeframe.

The total material cost of Alternative 3 materials and supplies is expected to be approximately the same as the Proposed Action. Therefore, the total estimated annual beneficial economic impacts from the construction phase within Riverside County would be $72.5 million, as shown in Table 4.15-1. Similarly, the Riverside County revenue would be the same as for the Proposed Action, or approximately $864,000.

Operation and Maintenance

Housing and Community

Permanent operating staff for Alternative 3 would be the same as for the Proposed Action, or approximately 5 workers. As with the Proposed Action, there would be minimal impact to the local housing supply or the community, even if all permanent workers were to relocate to the Blythe area.

Regional Employment and Economy

The employment of 5 workers for operation and maintenance for Alternative 3 would not adversely affect the regional labor market with current (September 2015) unemployment rates of 6.3 percent in Riverside County and 8.2 percent in La Paz County, but instead would have a beneficial effect.

The input-output model used to estimate economic impacts within Riverside County for the Proposed Action is also applicable to Alternative 3. Table 4.15-2 shows that total employment and economic impact, including direct, indirect, and induced impacts, would be 10.7 workers, with total income impact of $0.7 million, and output impact of $3.0 million per year.

Riverside County Revenues

Consistent with Board Policy No. B-29 regarding solar power plant payments, the solar power plant owner shall annually pay to the County a public benefit payment of $150 per acre of land involved in the power production process. This shall be done through a negotiated development agreement between the County and solar power plant owner. Additionally, the development agreement will contain terms requiring the solar power plant owner to take actions to ensure allocation directly to the County of the sales and use taxes payable in connection with the construction of the solar power plant, to the maximum extent possible under the law. The estimated tax revenue to the County under Alternative 3 would be $299,400 per year.

During operation and maintenance of Alternative 3, another revenue source for the County would be property tax revenue based on the private improvements of the gen-tie line. The estimated length of this line, including both inside and outside the Alternative 3 site boundaries, is 4.0 miles, the same as for Alternative 2. The Applicant has not provided a cost estimate for the gen-tie line. However, an economic study of a similar solar PV energy project in Imperial County (Imperial County 2011) estimated that construction of a 5-mile gen-tie line over BLM land would cost $12.4 million, or approximately $2.48 million per mile. Based on this example, it is estimated that the taxable value of the proposed gen-tie line, excluding land, would be approximately $9.9 million. Using the assumption that the County would receive 18.3 percent of the 1.158 percent tax collected on the gen-tie line, the estimated property tax revenue to the County under Alternative 3 would be approximately $20,000 per year.

Although it is likely that Alternative 3 would generate additional property tax revenues from onsite improvements not directly related to solar energy generation, no cost estimates are available for these improvements.

Decommissioning

After 30 years of operation, Alternative 3 would be decommissioned, with all equipment and improvements dismantled and removed from the site, and the site would be restored to an undeveloped condition. Decommissioning is expected to take up to a year to complete, and is expected to require a workforce substantially smaller than that required for construction.

Housing and Community

As in the case of Alternative 3 construction, the temporary decommissioning workforce would likely come mostly from western Riverside County and a smaller number from the Blythe area and La Paz County. Many workers would likely commute to the site. For workers who choose to commute weekly and temporarily relocate to the Blythe area during the workweek, it is expected that sufficient numbers of rental properties and hotel and motel accommodations would be available in the area.

Regional Employment and Economy

It is difficult to forecast employment conditions for 30 years into the future. Even if unemployment rates in Riverside and La Paz counties decline to lower levels, such as those projected for the near-term, demand for workers for decommissioning of Alternative 3 would not have an adverse impact on the regional or local labor market. Expenditures for decommissioning, including payments to workers, would have a beneficial effect on the regional economy. However, the linear input-output model of 2014 cannot be applied to the decommissioning work, since the regional economy will experience substantial changes in the intervening years.

Riverside County Revenues

No substantial sales or property tax revenues would be generated during or after decommissioning because the improvements which were the basis for the tax revenue would cease to exist.

4.15.4 Application of CEQA Significance Thresholds

SOC-1) Would the Project induce substantial population growth in an area, either directly or indirectly?

The construction of Alternatives 1, 2, or 3 would temporarily increase population growth in the area; however, it would not be substantial. This is because the required construction and operational workforce is not projected to trigger the need for new housing. As illustrated in Table 3.15-3, vacancy rates in the population and housing study area are high (8.0 to 48.2 percent), which include seasonal, recreational, and occasional use units. Additionally, within an hour commute, there are a high number transient lodging opportunities to serve construction employees. Furthermore, vacancy rates within the study area offer ample available housing to operational employees wishing to relocate within the local study area. Therefore, no significant construction- or operation-related impacts are expected for the study area housing supply, availability, or demand. Alternatives 1, 2, or 3 would not displace populations or existing housing, and it would not necessitate construction of replacement housing elsewhere. Impacts would be less than significant.

SOC-2) Would the Project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Alternatives 1, 2, or 3 would not displace existing housing units. No impacts to existing housing would occur.

SOC-3) Would the Project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Alternatives 1, 2, or 3 would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. No impacts would occur.

SOC-4) Would the Project create a demand for additional housing, particularly housing affordable to households earning 80% or less of the County's median income?

Alternatives 1, 2, or 3 would not result in a permanent increase in the population which would increase the permanent demand for housing, or temporarily increase demand for housing. Due to the temporary nature of Alternatives 1, 2, and 3 construction activities, it is unlikely that construction workers would permanently relocate closer to the area with their families.

Operation of Alternatives 1, 2, or 3 would require a nominal workforce and are not anticipated to increase the local population. Therefore, Alternative 1, 2 or 3 would not create a demand for additional housing. Impacts would be less than significant impact.

SOC-5) Would the Project affect a County Redevelopment Project Area?

Alternatives 1, 2, and 3 and their immediate vicinity would not be within a former County Redevelopment Project Area. No impact would occur.

SOC-6) Would the Project cumulatively exceed official regional or local population projections?

See SOC-4 above. Alternatives 1, 2, or 3 would temporarily increase the population during construction; however, they would not include housing and would require a nominal operational workforce. Alternatives 1, 2, or 3 would not permanently increase the local population, nor would they cumulatively exceed regional or local population projections. Impacts would be less than significant.

4.15.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.15 would be maintained. There would be no employment or expenditures that would generate a beneficial economic impact.

4.15.6 Cumulative Impacts

The potential for cumulative socioeconomic impacts exists where there are multiple projects proposed in an area that have overlapping construction schedules and/or project operations that could affect similar resources. Projects with overlapping construction schedules and/or operations could collectively result in a demand for labor that cannot be met by the region's labor pool, which could lead to an influx of non-local workers and possibly their dependents. This population increase could impact social and economic resources if there are insufficient housing resources and/or infrastructure and public services to accommodate the new residents' needs.

Section 4.1.5 identifies current solar and non-solar projects that have been or could be developed in the foreseeable future within eastern Riverside County. While a large number of projects may

be planned, and so considered to be possible for future development, not all of them are expected to be built due to construction funding constraints, schedule, and/or delays. Given the uncertain and challenging economic circumstances facing Federal and state economies as well as private developers, it is far from assured that future funding and other necessary support will be sufficiently available for all of the proposed projects to be realized within the projected schedules.

As shown in Table 4.1-2, currently eight BLM renewable energy projects are identified in the cumulative project scenario for the social and economic analysis. In addition, eight other projects are also identified that could require workers with similar skills to the Project, including non-BLM renewable energy projects, transmission lines, and electrical substations. The geographic scope of the cumulative impacts analysis includes populated areas within a 2-hour commute distance of any of these projects, which would extend as far west as Moreno Valley, given the locations of the cumulative projects. Although the 2-hour commute distance would also extend into Arizona, the low population in western Arizona would contribute minimally to the available labor pool in the geographic scope. Therefore, the analysis for employment focuses on the California portion of this area.

There are 12 solar projects proposed or under construction along the I-10 corridor predominantly between Desert Center and Blythe. Some of these projects have already completed construction. Based on the currently available data for these various projects (information obtained from Plans of Development and other project documents), and assuming all projects move forward, these projects would be constructed in the same general timeframe as the Proposed Action (i.e. between 2017 and 2020).

The cumulative analysis conservatively assumes that the construction of all of the proposed solar projects would be under construction within the 48-month cumulative timeframe for construction-related impacts of the Project. This cumulative impacts discussion is based on available data with respect to both construction schedules and the projects' labor requirements. If construction and operating labor requirements are not known for some projects, average work force levels of other comparable projects and professional judgments have been used to develop conservative estimates of expected cumulative labor requirements for these projects.

4.15.6.1 Alternative 1 – Proposed Action

4.15.6.1.1 Economic

Construction

Cumulative Construction Labor Needs

Table 4.15-3 shows the estimated construction workforces for several of the projects in the cumulative scenario and the DQSP. The workforce numbers from other recent projects for which these data are available (Modified BSPP, Desert Quartzite, MSEP, BMSP, Palo Verde Mesa Solar, Genesis Solar, Desert Harvest, and Desert Sunlight) were used to estimate the average and peak construction workforces per MW of solar projects. The average and peak workforce per MW was then used to estimate the workforce for those reasonably foreseeable future projects for which no workforce data is available.

If all proposed solar projects identified in eastern Riverside County are constructed (including the Project), a total of 3,606 MW of new solar power would be developed. The average solar

power project would be approximately 400 MW in size and may be expected to require an average of approximately 318 full-time workers to be built. The average peak labor force may be up to 586 workers. Because the precise construction schedules for each project are currently unknown, this analysis assumes that the peak construction periods of the solar projects in the cumulative scenario would be of a similar length to the Project (three years).

Table 4.15-3. Average and Peak Construction Employment for Future Solar Projects

Project	MW	Average Workers	Peak Workers
Modified Blythe Solar Power Project	485	340	500
Desert Quartzite	450	450	810
Palen Solar Project	500	566	1145
Rio Mesa Solar Electric Generating	500	365[1]	715[1]
Desert Harvest	100	100	250
Palo Verde Mesa	486	300	500
RE Crimson	450	329[1]	644[1]
Mule Mountain III	150	110[1]	215[1]
Blythe Mesa Solar Project	485	300	500
Column Total	3,606	2,860	5,279
Average for all Projects (per MW)		0.83	1.53

Note:
1 - Employment estimated by extrapolation from MW.

Project developers would likely seek to minimize the construction occurring during the hottest summer months and may therefore stagger their construction periods accordingly. Consequently, some seasonality may be expected to occur as developers favor more construction during the region's cooler winter months. It is assumed that peak construction needs for each of the solar projects would be approximately evenly spread throughout the 48-month period for cumulative construction-related impacts. If all of the projects experienced their peak construction during the 48-month cumulative temporal scope, the regional labor need for a realistic "worst case condition" would be for four projects to have peak labor needs during the same winter season. Therefore, the equivalent of four average (400 MW) solar projects could experience peak construction at one time. This gives a peak cumulative solar workforce of approximately 2,400 workers, in addition to an average workforce for the other five solar projects (approximately 1,600 workers), for a total worst-case projection of 4,000 workers.

Because not all four of the cumulative solar projects would be under construction for the entire 48-month Project construction period, the actual cumulative construction workforce is expected to be lower. However, it is reasonable to assume that some of the other cumulative projects listed in Table 4.1-3 may begin construction in this time period. For this reason, a rounded winter-season peak of approximately 4,000 construction workers is used in this analysis. The Project's maximum potential contribution to this cumulative effect would be approximately 20 percent during its own peak construction period. The Project's average contribution to the cumulative impact would be approximately 11.25 percent during its non-peak construction.

Regional Labor Force Supply

As discussed previously, the total work force of skilled construction workers currently living in Riverside County is estimated to be approximately 72,017 (Table 3.15-4). Assuming that these workers are evenly distributed throughout Riverside County, the total construction work force within the geographic scope would be approximately 24 percent of this, or 17,284 workers. Although the population of skilled construction workers in the Riverside-San Bernardino-Ontario MSA is expect to increase by approximately 5 percent by 2022 (Table 3.15-7), even if this level of growth occurred in the geographic scope, the cumulative labor force demand would still represent more than the region's currently forecasted future skilled construction labor force.

The current unemployment rate in Riverside County is estimated to be 6.3 percent (see Table 3.15-8). Applying this rate to the construction workers in the geographic scope yields an estimate of approximately 1,089 unemployed construction workers, which is fewer than the cumulative construction worker demand for the solar projects. Therefore, future demand for 4,000 construction workers would exceed the capacity of the current skilled labor force. Despite this need, and the possibility that many of the region's currently unemployed residents may lack transferable skills or have the physical aptitude to acquire the necessary skills required to serve the cumulative labor demand, many residents could be trained to be employable by these projects. Further, some of the construction work would be more entry-level positions which may be suitable for less skilled workers. Some of the regional workforce currently employed in other sectors also could have the capabilities to qualify for Project construction work. In such cases, some job transferring may occur, particularly because the construction jobs may be expected to be relatively well-paid and attractive for many local residents. The less skilled or desirable jobs vacated by individuals transferring to construction work could be filled by other less skilled unemployed residents. Therefore, there would be a demand for construction workers that would exceed the available labor supply within the geographic scope. It is assumed that those job positions would be filled by workers relocating into the region from beyond the geographic scope of the cumulative projects.

Housing and Lodging Impacts within the Local Study Area

Given the numerous variables discussed above, it is difficult to project the extent of future weekly commuting or other in-migration that would be necessary to meet the future cumulative labor needs within the region. However, as a conservative assumption, it is assumed that up to 4,000 construction workers could require temporary housing in the local or regional area.

The skilled construction labor force within the areas of Riverside County outside of the geographic scope is estimated to be approximately 54,733. This suggests that there is likely to be a considerable additional potential labor force available willing to commute weekly or to relocate temporarily to the area. Consequently, from a broader geographic and labor force perspective, no significant shortages of adequately skilled construction workers is foreseen, provided that adequate suitable housing is available for relocating near the work sites.

The cumulative influx in construction labor to the area could create demand for temporary housing that is greater than the existing supply of temporary lodging. As discussed in the previous construction impact analysis, private and public RV/campgrounds are not expected to be suitable or attractive lodging options for most construction workers seeking local accommodations. There are expected to be approximately 238 vacant rental units and 349 vacant

hotel and motel rooms available in the local area. Assuming that about half of the construction workers might be willing to share accommodations to save on their lodging costs, the existing local rental units, hotels, and motels could be able to house up to 1,174 construction workers seeking local temporary housing. If these workers were willing to commute up to 2 hours to the site daily, the supply of vacant rental units (4,708) and hotel and motel rooms (4,334) increases substantially, potentially housing up to 9,042 construction workers, or more than double the number needed to temporarily house the approximately 4,000 construction workers that could move into the area as a result of the cumulative projects. Because there is an ample supply of housing units to accommodate workers drawn from within the two hour commuting distance, the incremental effects of the Project, when considered together with other past, present, and reasonably foreseeable future projects, would not result in cumulatively significant, adverse impacts to housing supply during construction (impact SOC-4).

Irrespective of the availability of temporary housing, it may be expected that, even under future cumulative conditions, a relatively small proportion of construction workers would choose to relocate permanently to the local communities where they would be employed during construction. This is because many construction workers could choose to commute relatively long distances to their work sites and may expect to seek work within the more populated areas of Riverside and San Bernardino counties in the future.

Furthermore, during the same time period with the greatest potential for adverse impacts resulting from the cumulative demand for construction worker housing, there also would be a major positive economic stimulus to the Blythe area and eastern Riverside County economies associated with the solar development. This economic infusion could result in the construction or availability of additional rental/hotel units and so could offset a portion of the housing need-related impact.

In summary, there is potential for short-term adverse cumulative social and economic impacts in the Blythe area associated with the demand for skilled construction labor for the cumulative projects proposed for future development within eastern Riverside County. Analysis suggests that future construction labor demand would exceed the existing local work force within eastern Riverside County. Therefore, there may be increased demand for temporary local housing from construction workers seeking to commute weekly to the local area. Given the estimated availability of lodging and possible rental housing, it is expected that there could be a shortage of adequate and suitable housing to meet all future construction worker temporary housing demand. Therefore, adverse housing impacts could result if the cumulative demand for housing increased the price for local residents seeking housing. Economic impacts could also occur if hotel and motel vacancy rates fell such that rooms were not available for potential visitors to the area who would otherwise generate economic stimulus from vacation-related spending.

The Project would not displace existing housing (impact SOC-2) or people (impact SOC-3), so would not contribute to cumulative impacts to housing. The Project is not located in a Community Redevelopment Project area (impact SOC-5). The Project is not expected to induce population growth (impact SOC-1) or contribute to an exceedance of population projections (impact SOC-6).

Operations

If all of the cumulative projects are constructed, a total of 5,206 MW of solar power projects would operate concurrently. As shown in Table 4.15-4, the average solar project is estimated to require approximately 0.11 operational employees for each MW of solar power production.

Consequently, if full build-out of the planned solar development occurs, the future cumulative operational employment in the region would be approximately 573. The five operational jobs associated with the DQSP represent a contribution of approximately 0.9 percent to the cumulative operation- and maintenance-related need. Because the other cumulative projects for social and economic effects include an expanded electrical substation and transmission lines, it is not anticipated that these would add noticeably to the cumulative employment demand.

Table 4.15-4. Operational Employment for Existing and Future Solar Projects

Project	MW	Employees
Modified Blythe Solar Power Project	485	20
Desert Quartzite	450	5
Desert Sunlight	550	15
Genesis Solar Energy Project	250	65
McCoy Solar Energy Project	750	20
Palen Solar Project	500	134
Rio Mesa Solar Electric Generating Facility	500	80[1]
Desert Harvest	150	8
Palo Verde Mesa	486	77
RE Crimson	450	72[1]
Mule Mountain III	150	24[1]
Blythe Mesa Solar Project	485	12
Column Total	5,206	573
Average for all Projects (per MW)		0.11

Note:
1 - Employment estimated by extrapolation from MW.

As shown in Table 3.15-4, there are 47,094 workers in the "Transportation, Warehousing & Utilities" industry group in Riverside County, for a total of approximately 11,302 workers within the geographic scope. Although not all workers in this category may possess the skills required for solar power plant operation and maintenance, the transferability of other skills, on-the-job and local community college training opportunities, and the lower skilled qualification requirements for some of the jobs suggest that there would be many others outside this category who would be able to meet the cumulative operational labor needs. Therefore, in the absence of more precise data on available skills, this industry group is used as the available labor pool for this analysis.

Based on current unemployment rates, it is assumed that approximately 712 of the 11,302 workers within the geographic scope would be available to meet operational labor needs.

Because there are an estimated 712 workers available, and a cumulative operations labor force of approximately 573 workers, there may be an in-migration of operational workers to meet the cumulative labor need. As described in Section 3.15.1.2, there are 238 vacant housing units for rent in the immediate area (i.e., Blythe and Ehrenberg). Estimates from the U.S. Census also show 146 homes for sale in the Blythe, Ehrenberg, and Quartzsite communities. Additionally, as shown in Table 4.1-3, there are a number of residential developments proposed in Blythe that could be expected to be built by the start of the solar power plants' operation. Furthermore, the relatively limited number of new residents would not be expected to result in any noticeable change to the local communities' social composition or character. The future operations of the solar projects would also generate significant annual economic benefits in local employment, direct and indirect spending at local businesses and positive sales and other tax benefits for the local area. Consequently, the cumulative social and economic effect of the future operations of the solar projects would be minor and primarily beneficial, although the increased demand for housing and subsequent decrease in supply could increase housing prices in the local area, a potentially adverse effect for current residents or others seeking to move into the area.

Decommissioning

Evaluating the Project's cumulative impacts when future facility decommissioning occurs is highly speculative. Decommissioning is expected to occur after 30 years of operation. It is not possible to project with confidence the likely future social and economic conditions of the local and regional study area. Similarly, the extent to which the projects in the cumulative scenario would undergo decommissioning concurrently is unknown.

Nonetheless, Project decommissioning is expected to require a workforce similar to the construction phase, and the Project is expected to be one of many similar solar projects within eastern Riverside County. As such, its contribution to cumulative social and economic effects would be proportional to: (a) its size relative to the other development projects in the region; and (b) the collective size of projects undergoing decommissioning or construction at that time. Although the cumulative effects of construction were found to be potentially adverse based on a shortage of temporary housing, decommissioning would not likely overlap with as many projects as construction, and in over 30 years' time, based on regional population growth trends, it is likely that there would be more local workers and more temporary housing options available to accommodate decommissioning needs.

4.15.6.1.2 Social

Construction

The cumulative impact of the many proposed future solar and non-solar development projects in eastern Riverside County would result in considerable short-term construction activity at many locations throughout the region. As described previously, future cumulative demand for construction workers for these projects could exceed the available supply of skilled construction workers living in the region. In this case, construction workers from elsewhere could be attracted to the area by the construction employment opportunities.

The ongoing construction activity in the region, influx of construction workers both commuting daily to the site and those who could choose to temporarily live in the local area could noticeably alter the social character and environment within Blythe and the other local communities. An in-

migration of 4,000 construction workers would be equivalent to approximately 17 percent of the total population of the Blythe, Ehrenberg, and Quartzsite communities and, consequently, would likely be very noticeable.

The potential influx of construction workers to the local area would be accompanied by an increase in economic activity from their spending in local business establishments. In addition, the planned new development projects would also make purchases from local businesses for construction materials and supplies and various kinds of services.

The effects of the increased activity on local attitudes and quality of life may vary among residents. While some residents may be displeased by increased traffic, new visitors and temporary residents (particularly those employed or otherwise benefiting economically from the construction) could welcome the development.

However, an influx of new workers also could increase the demand for certain kinds of government services and infrastructure (e.g., police and fire services and medical facilities and services). There have been other past instances of rapid growth in rural areas as a result of energy-related development, most notably the energy boom in the 1970s, in places like Wyoming, and the relatively recent shale oil boom in North Dakota. A number of communities, such as Rock Springs, Wyoming, and Watford City, North Dakota, became known as "boomtowns," and the local economic benefits from the new energy development in the region were accompanied by some social changes that were not seen as positive by many existing residents. These included changes such as growth in number of bars, higher crime rates, and perceived (by some) aesthetic degradation due to rapid growth occurring to accommodate the sudden increase in population.

The presence of existing larger communities (such as Indio and Coachella) that are within possible commuting range for construction workers could suggest that circumstances may differ substantially from those facing the more isolated Wyoming and North Dakota boomtown communities in the past. However, there would remain a potential for temporary social impacts in the Blythe, Ehrenberg, and Quartzsite areas.

Operation and Maintenance

As discussed in the corresponding economic cumulative analysis, Project operation and maintenance would be expected to have a minor and beneficial effect on the local and eastern Riverside County economy. In the cumulative scenario, there may be an in-migration of solar plant operation and maintenance workers. There is likely to be more than sufficient available local housing to accommodate the housing needs of these workers and their families. Furthermore, the relatively limited number of new residents would not be expected to result in any noticeable change to the local communities' social composition or character. The existence and operation of the solar projects themselves could result in changes to the character and culture of the area by converting open space, one of the primary land uses in eastern Riverside County, to solar plants. The PVVAP (Riverside County 2015b) notes that "The character of the area is reflected by the prominence of the Open Space-Rural and Agriculture land use designations here." A reduction in the amount of open space in eastern Riverside County due to solar plant development could result in cultural changes to the area, such as reduced use of desert recreational opportunities and an altered sense of the character of the area relative to that described in the PVVAP. The future operations of the solar projects also would generate

significant annual economic benefits in local employment, direct and indirect spending at local businesses, and positive sales and other tax benefits for the local area. The cumulative social and economic effect of the future operations of the solar projects would be minor and beneficial.

Decommissioning

As discussed in the corresponding economic cumulative analysis, there is insufficient information to reliably project the conditions when decommissioning of the proposed facilities would occur in 30 or more years into the future. Consequently, it would be speculative to try to characterize the future situation and circumstances under which facility decommissioning would occur. Similar to the economic cumulative analysis, it is anticipated that the effects from decommissioning could be of the same type and nature as those from construction, but would not likely be of the same magnitude.

4.15.6.2 Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

As discussed in Section 4.15.3.2, the construction spending and workforce requirements for Alternative 2 are expected to be similar to those of the Proposed Action, although the duration of construction may be shorter. Consequently, the contribution of Alternative 2 to a cumulative impact during construction and decommissioning would be less than the Proposed Action, because it would occur over a shorter time period.

4.15.6.3 Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

As discussed in Section 4.15.3.3, the construction spending and workforce requirements for Alternative 3 are expected to be similar to those of the Proposed Action, although the duration of construction may be shorter. Consequently, the contribution of Alternative 3 to a cumulative impact during construction and decommissioning would be less than the Proposed Action and Alternative 2, because it would occur over a shorter time period.

4.15.6.4 Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. The Project would not result in in-migration of construction or operational workers, so would not contribute to adverse cumulative impacts associated with housing and social conditions. There would be no spending or tax revenues associated with the Project, so the Project would not contribute to a cumulative beneficial impact to economic conditions.

4.15.7 Residual Impacts

Because no mitigation measures are recommended, residual social and economic effects would be the same as discussed in Section 4.15.3.1, Alternative 1: Proposed Action.

4.16 Special Designations and Lands with Wilderness Characteristics

4.16.1 Methodology for Analysis

The analysis of the Proposed Action and alternatives assesses whether construction, operation, maintenance, and decommissioning of the Project would conflict with the status or management goals of the specially designated areas or lands with wilderness characteristics in the vicinity of the Project. These designations include Wilderness Areas, Areas of Critical Environmental Concern (ACECs), and a National Back Country Byway.

The analysis reviews the Project in relationship to the specific legislation and guidance which are required in the designation and management of Special Designations. These are: FLPMA, CDCA, NECO, the Wilderness Act of 1964, and the National Back Country Byways Program. Additional discussion related to impacts within special designation areas is found in Sections 4.3, *Biological Resources – Vegetation*; 4.4, *Biological Resources – Wildlife*; 4.10, *Lands, Realty, and Agricultural and Forestry Resources*, and 4.14, *Recreation and Public Access*.

The MUC class designations and some special designations were changed under the DRECP. Changes to Special Designations included modification of ACECs, designation of SRMAs and ERMAs, and designation of DFAs. As an application in the Riverside East SEZ filed before June 30, 2009, the DQSP is not, and will not be, subject to the terms of the DRECP. In addition, the analysis of the Project in this PA/EIS/EIR is based on the land use designations and visual resource classifications that were in effect on March 6, 2015, the date of the NOI, which do not include the newly designated ACECs and DFAs. A discussion of the differences between the CDCA Plan and the DRECP land use allocations, and their effect on the analysis of the Project in this PA/EIS/EIR, is presented in Appendix E.

4.16.1.1 CEQA Significance Criteria

There are no criteria listed in Appendix G of the CEQA Guidelines related to special designations (wilderness areas, ACECs, etc.). Criteria related to the designation of lands as farmland or forestland are included within Section 4.10, *Lands, Realty, and Agricultural and Forestry Resources*.

4.16.2 Applicant-Proposed Measures

There are no APMs proposed to address potential effects to special designations or lands with wilderness characteristics.

4.16.3 Direct and Indirect Impacts

4.16.3.1 Alternative 1: Proposed Action

Because the Project site itself is not subject to any special designation, the Proposed Action would have no direct impact on existing special designations or lands with wilderness characteristics in the Project vicinity, specifically Wilderness Areas, ACECs, and a National Back Country Byway. The Project may have indirect impacts on special designation areas if it has dust emissions, noise, or visual intrusions which would conflict with the status or management goals of the area.

As discussed in Section 3.16.1.5, there are five ACECs located in the vicinity of the site. Of these, four ACECs range in distance from 7 to 19 miles from the Project site, and would therefore not be affected by dust emissions, noise, or the visual appearance of the Project. The Mule Mountains ACEC is located approximately one mile southwest of the site, and could potentially be exposed to fugitive dust or noise generated by the Project. However, this ACEC was established to manage cultural resources, with the goal of protecting cultural values while providing for compatible public uses. While the analysis of noise impacts presented in Section 4.12 shows that noise from the construction of the Project may be noticeable to persons at this distance, noise would not have any effect on cultural resources within the ACEC, and would therefore not conflict with the status or management goals of the area. Similarly, fugitive dust in the form of PM_{10} and $PM_{2.5}$ may reach this area, but would not have any effect on cultural resources within the ACEC.

As there are no Wilderness Areas or lands with wilderness characteristics within or adjacent to the Project area, there would be no direct impacts on Wilderness Areas or lands with wilderness characteristics from the Proposed Action. Similar to the ACECs, the Project could result in indirect impacts to Wilderness Areas or lands with wilderness characteristics through noise or air emissions. The closest Wilderness Area is the Palen-McCoy Wilderness Area, located approximately 7 miles northwest of the Project area. The closest lands with wilderness characteristics are located approximately 10 miles southwest of the Project site, on the other side of the Mule Mountains. Given the distance to these lands, it is unlikely that construction-related noise or air quality impacts could affect the wilderness characteristics of these areas.

As discussed in Sections 4.3, *Biological Resources – Vegetation*, and 4.4, *Biological Resources – Wildlife*, indirect effects to vegetation and wildlife could occur as a result of the spread of invasive species outside of the Project area. The Project does not propose to use off-site roads within lands with wilderness characteristics outside of the Project fence line, and would not introduce invasive species within these lands. Although the Project would create a movement barrier for large wildlife due to the exclusion fencing, within off-site lands with wilderness characteristics, the Project would have no effect on wildlife habitat connectivity. The Project would not indirectly affect the natural condition of these lands with wilderness characteristics. The Project area under the Proposed Action would also be consistent with the designation of the land area as a DFA under DRECP.

4.16.3.2 Alternative 2: Resource Avoidance Alternative

Similar to the Proposed Action, the land area associated with Alternative 2 is not a special designation area, so there would be no direct impacts. As with the Proposed Action, air emissions or noise from the Project could have an indirect impact on special designation areas, if such emissions or noise were to be detectable in the special designation area, and would conflict with the status or management goals of the area. Because the land are associated with Alternative 2 is reduced from that of the Proposed Action, any air emissions or noise would be located at the same, or a reduced, distance from the Mule Mountains ACEC. Because the Proposed Action would not create a conflict with the status or management goals of this ACEC, neither would Alternative 2. The Project area under Alternative 2 would also be consistent with the designation of the land area as a DFA under DRECP.

4.16.3.3 Alternative 3: Reduced Project Alternative

Similar to the Proposed Action, the land area associated with Alternative 3 is not a special designation area, so there would be no direct impacts. As with the Proposed Action, air emissions or noise from the Project could have an indirect impact on special designation areas, if such emissions or noise were to be detectable in the special designation area, and would conflict with the status or management goals of the area. Because the land are associated with Alternative 3 is reduced from that of the Proposed Action and Alternative 2, any air emissions or noise would be located at the same, or a reduced, distance from the Mule Mountains ACEC. Because the Proposed Action would not create a conflict with the status or management goals of this ACEC, neither would Alternative 3. The Project area under Alternative 3 would also be consistent with the designation of the land area as a DFA under DRECP.

4.16.4 Application of CEQA Significance Thresholds

There are no criteria listed in Appendix G of the state CEQA Guidelines related to special designations as described in Section 3.16 (Wilderness Areas, ACECs, lands with wilderness characteristics, and a Back Country Byway). Criteria related to the designation of lands as farmland or forestland are included within Section 4.10 *Lands, Realty, and Agricultural and Forestry Resources*.

4.16.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.16 would be maintained. There would be no project developed within a special designation area, and no project which could indirectly impact a special designation area through air emissions or noise. Therefore Alternative 4 would not result in any impacts associated with special designation areas.

4.16.6 Cumulative Impacts

The Proposed Action, Resource Avoidance Alternative, and Reduced Project Alternative would have no impacts on special designations such as Wilderness Areas, ACECs, the National Back Country Byway, or lands with wilderness characteristics. Therefore, they would not cause or contribute to any cumulative impact to these areas.

4.16.7 Residual Impacts

Because no mitigation measures are recommended, impacts to special designations and lands with wilderness characteristics would be the same as discussed in Section 4.16.3.1, *Alternative 1: Proposed Action*.

4.17 Transportation and Traffic

4.17.1 Methodology for Analysis

This section evaluates the potential impacts of the Proposed Action and Alternatives on transportation and traffic. The analysis is based on the *Traffic Impact Analysis for the Desert Quartzite Solar Project* prepared by URS Corporation (2016), which has been independently reviewed on behalf of the BLM by its environmental consultant. The Traffic Impact Analysis evaluates impacts based on estimates of the amount of traffic that would be added to area roads during Project construction, operations, and decommissioning, as a result of commuting workers, delivery of Project materials, and potentially truck delivery of water for construction.

As discussed in Section 3.17, impacts to transportation systems were evaluated based on Level of Service (LOS) determinations, which is a generally accepted measure used by traffic engineers, planners, and decision-makers to describe and quantify the congestion level on a particular roadway or intersection based on specific characteristics of traffic flow. LOS determinations are made both on the roadway segments, and on the length of delay at intersections.

The LOS on roadway segments is based on the ratio of the traffic volume to capacity (V/C). The vehicular capacity is determined based on the physical and operational characteristics of the roadway, such as lane configuration and flow speed (typical speed along a roadway segment), and the volume is based on actual traffic counts (for existing conditions) or predicted traffic counts (for analysis of impacts). The V/C ratio is assigned a corresponding letter grade to represent the overall condition of the roadway or level of service. The LOS at intersections is based on observed average delay times, in seconds per vehicle. The grades range from LOS A (best operating conditions characterized by free-flow traffic, low volumes, and little or no restrictions on maneuverability) to LOS F (worst operating conditions characterized by forced traffic flow with high traffic densities, slow travel speeds, and often stop-and-go conditions).

The threshold for significance of impacts to transportation and traffic is generally based on the expected change in LOS. In their Guide for the Preparation of Traffic Impact Studies (Caltrans 2002), Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D. The Riverside County Transportation Commission (RCTC) 2010 Congestion Management Program (CMP) establishes a minimum LOS of E for regional roadways and highways. The Riverside County General Plan (Riverside County 2015a) strives to maintain LOS C along County-maintained roads and state highways, with an exception that LOS D may be allowed within Community Development Areas at certain types of intersections.

4.17.1.1 CEQA Significance Criteria

The criteria used to determine the significance of the Project-related traffic and transportation impacts are based on the criteria identified in the state CEQA Guidelines, Appendix G. Project-related impacts would be considered significant if they would:

> TRA-1) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

TRA-2) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

TRA-3) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

TRA-4) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

TRA-5) Result in inadequate emergency access.

TRA-6) Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The following additional significance criteria from the County of Riverside Environmental Assessment form are used in the analysis. A project could have potentially significant impacts if it would:

TRA-7) Alter waterborne, rail or air traffic.

TRA-8) Cause an effect, or a need for new or altered maintenance of roads.

TRA-9) Cause an effect upon circulation during the project's construction.

TRA-10) Affect bike trails.

4.17.2 Applicant-Proposed Measures

In their *Traffic Impact Analysis for the Desert Quartzite Solar Project* prepared by URS Corporation (2016), the Applicant proposed the following APMs to minimize impacts on Transportation and Traffic from the Project. The impact analysis in Section 4.17.3 assumes that these APMs would be implemented as part of the Project to address the impacts discussed below:

APM TRA-1: Worker Vehicle Reduction (Project Construction – PM Peak Hour)

In their *Traffic Impact Analysis for the Desert Quartzite Solar Project* (URS 2016b), the Applicant calculated that a maximum 650 construction worker vehicle threshold during the afternoon (PM) peak period was the threshold at which the LOS at the intersection of SR-78/16th Avenue would degrade from A to F. To address this impact, the Applicant would limit construction worker vehicles leaving the Project site between 4:00 PM to 6:00 PM to 650 vehicles, resulting in LOS D at the SR-78/16th Avenue intersection. This limitation would thereby reduce the PM peak hour construction impact, which would be caused by up to 810 construction worker vehicles leaving the Project site between 4:00 to 6:00 PM during the peak construction period.

In order to ensure that Project-related traffic levels do not exceed 650 passenger vehicles (or passenger car equivalents [PCE] considering one truck or bus is equivalent to 3 PCEs) departing the construction site during the PM peak traffic period of 4:00 to 6:00 PM, the Applicant would monitor and enforce construction traffic limits to avoid and minimize construction traffic impacts. Available traffic count and monitoring technology would be used to ensure construction traffic limits are met, and would be performed and logged using one or more of the following methods:

- Automatic Counts (Tube Counters, Radar Counters, Machine Vision)
- Video Recording with Manual Counting in the Office
- Manual Counts at the gate/entry point

The monitoring would be conducted during the peak construction months only when the traffic limits are needed. Assuming a 25-month construction period, the peak construction workforce months are currently anticipated to occur in the latter parts of the overall construction phase (e.g., Months 17-21). In the event that the 650 passenger vehicle limit is exceeded during the PM peak period of 4:00 to 6:00 PM, the Applicant would implement and document one or more of the following traffic reduction measures to reduce PM peak traffic to at or below the 650 passenger vehicle (or PCE) limit:

- Encourage carpooling at the level needed to achieve the needed reduction in traffic; and/or
- Arrange for busing to and from the site for the needed number of employees to get below the 650 passenger vehicle limit.

Based on the Applicant's experience on other similar projects, construction workers are expected to voluntarily carpool and thereby help reduce the likelihood that the 650 passenger vehicle limit would be exceeded during the peak construction period. In the event that the 650 passenger vehicle limit is found to be exceeded, the Applicant would further evaluate carpool options and/or busing. Although not anticipated, if necessary, off-site busing locations will be identified at that time. The results of the monitoring, as well as information on any remedial actions, would be provided to BLM and the County.

APM TRA-2: Traffic Monitoring and Control Plan

Prior to the Notice to Proceed, the Applicant would develop a standard traffic monitoring and control plan designed to minimize impacts to traffic flow consistent with the size and scope of Project construction. The plan would be submitted to BLM and the County for review and approval prior to the beginning of construction.

Proposed measures, where applicable, include but are not limited to the following:

1. Use proper signs and traffic control measures in accordance with Caltrans and Riverside County requirements. All traffic signs, equipment, and control measures shall conform to the provisions specified in the Caltrans Manual of Uniform Traffic Control Devices for Streets and Highways. Specific jurisdictional requirements will be identified during the plan review and approval process.
2. Schedule traffic lane or road closures during off-peak hours whenever possible (e.g., during construction at road crossings, culverts or any Project activity that may encroach in the traveled way). No traffic lane or off-site road closures are currently planned for the proposed Project.
3. Limit vehicular traffic to designated access roads, construction laydown and worker parking areas, and the Project construction site.
4. Provide orientation and briefing to employees and contractors on the desired construction route.

5. Encourage worker carpooling to minimize drive-alone worker trips.

Prior to construction, the Applicant would coordinate with the Riverside County Transportation Department to discuss road maintenance requirements and plans to ensure that road conditions along 16th Avenue/Seeley Avenue are kept safe for Project-related traffic to traverse, including potential adverse roadway conditions following infrequent storm events in the area.

As discussed in Section 4.1.6, the impact analysis assumes that the APMs have been implemented, and these measures are therefore requirements for approval of the Project. The APMs are to be incorporated into the EICMPP/MMRCP, along with the agency-required mitigation measures.

4.17.3 Direct and Indirect Impacts

4.17.3.1 Alternative 1: Proposed Action

The impacts to transportation and traffic that could occur from the Project include reducing the availability of parking; interference with bus, bicycle, or pedestrian facilities; direct disruption of traffic on existing roadways by construction activities; and indirect disruption of traffic through an increase in the number of vehicles. The Project is not located in an area with public parking facilities. Although parking and staging areas would be required for Project-related vehicles and equipment, these areas would be incorporated into the Project, and would be designed to accommodate the expected numbers of vehicles. Similarly, there are no public bus, bicycle, or pedestrian facilities in the area, so there would be no impact to these from the Project. These impacts are not discussed further.

The Project would involve closure of a land area that currently contains routes that are open to the public, as well as an increase in traffic volumes on area roads. These impacts are discussed in the following subsections.

Construction

Direct Impacts to Existing Project Site Routes and Roads

As discussed in Section 4.14, fencing of the Project area would eliminate public access to six open routes for the duration of the Project. These routes include all or portions of routes 660862, 660863, 660866, 661092, 661102, and 661501. Three of these routes provide access to the private property inholding (660862, 660866, and 661501) within the Project area and three routes provide access to the Mule Mountains (660863, 661092, and 661102). Access to the private property inholding would no longer be necessary, once it is incorporated into the Project. Use of the routes that provide access to the Mule Mountains is expected to be primarily recreational use by OHVs. With the closure of the three routes that access the Mule Mountains, alternative access to the Mule Mountains would occur by traveling west on 22nd Avenue to Gravel Pit Road, southwest along Gravel Pit Road, and then west on an unpaved extension of 24th Avenue to BLM routes 660863 and 661093. Although access via alternative routes may be slightly longer, access would not be eliminated. With the closure of the three routes that access the Mule Mountains, use of these routes would be displaced to other nearby routes that provide similar access. Due to the estimated low use of the routes within the Project area, there would be minimal impacts from displaced use.

Construction of the gen-tie line near the CRSS would not require access or closure of Power Line Road, a paved road owned and maintained by SCE to access the CRSS. Construction would occur only within the BLM ROW for the gen-tie line. Construction of the gen-tie may require temporary closure of route 660703, which is along an existing transmission line, to pull and string the gen-tie line. Potential impacts would be reduced through implementation of APM TRA-2, as modified by Mitigation Measure TRN-1, which would require a Traffic Monitoring and Control Plan to limit impacts associated with temporary road closures. In addition, to reduce temporary impacts to access on this route, Mitigation Measure REC-2 (discussed in Appendix G, Section G.14) would require the Applicant to coordinate with BLM to temporarily close route 660703 if needed during construction and/or maintenance of the gen-tie line, and to post a public notice of the temporary route closure and penalties for any off-route OHV activities.

The Project access road, 16th Avenue/Seeley Avenue, would be used for up to 2,574 trips per day during construction, including 300 deliveries of construction material by truck, and 654 water deliveries by truck. Because the road is unimproved and would be subjected to intensive use by trucks, construction could result in degradation of the condition of the road to the extent that it could become unusable by emergency vehicles and current local users. To maintain the condition of the road, Mitigation Measure TRN-4 would require that the Applicant pave the segment between Neighbours Boulevard (State Route 78) and the site entrance, a length of approximately 5.6 miles, prior to beginning any other construction activities at the Project area.

Impacts due to Construction Traffic and Equipment

The analysis of impacts associated with construction traffic and equipment is based on the duration of construction, and magnitude of construction workers and vehicle trips, as discussed in Section 2.3.4.8. The analysis was calculated in PCE, to account for the greater impact that trucks have on traffic. Workers were assumed to commute in passenger cars, and the analysis assumed there would be no carpooling. Both construction deliveries and water deliveries were calculated assuming that one truck is equal to 3 PCEs.

The Applicant estimates that the construction workforce would average approximately 450 employees over the 25- to 48-month construction period, and would have a peak workforce of approximately 810 employees, resulting in an estimated maximum of 1,620 daily commuting trips. For purposes of a conservative estimate of traffic impacts, the Applicant assumed that the shortest construction duration, of 25 months, would apply.

Construction would also involve an estimated 300 daily trips by 50 vehicles to deliver materials to the Project site. The analysis assumed that 20 percent of these deliveries would occur during the peak morning hour, and the remainder would occur in non-peak traffic periods. In addition to truck deliveries of materials, truck deliveries of water for construction may be used. Although groundwater from on-site wells is the anticipated source for construction water needs, in the event an on-site source is not available, it may be necessary to truck water from an off-site source. If trucking water is required for the entire 25 month construction period, up to approximately 57,000 water truck deliveries (assuming 8,000 gallon capacity water trucks) could potentially be required. These trips are expected to originate within 10 miles of the Project site. The Applicant would require all water deliveries to occur during off-peak hours. Table 4.17-1 shows the number of trips that are estimated to occur in the peak month of construction.

Table 4.17-1. Estimated Number of Construction Trips in Peak Month

Category	Actual No. of Vehicles	Daily Trips (One-Way)	AM Peak Hours Trips (7:00 – 9:00 am)		PM Peak Hours Trips (4:00 – 6:00 pm)		Non-Peak Hours Trips	
			In	Out	In	Out	In	Out
Workers[1]	810	1,620	0	0	0	810	810	0
Construction deliveries[2]	50	300[2]	30	30	0	0	120	120
Water truck deliveries[3]	109	654[3]	0	0	0	0	327	327
Total	969	2,574	30	30	0	810	1,257	447

Source: URS 2016b

Notes:

1 – The Project would include 810 worker vehicles resulting 1,620 daily (in/out) one-way trips during the Peak Project Construction Months in the peak year. It is assumed that all the workers arrive at the Project site by 7:00 AM, thereby avoiding the 7:00–9:00 AM peak hours; 810 worker vehicles are assumed to depart the site at 5:00 PM during the 4:00–6:00 PM peak hours. The 810 worker vehicles estimate does not include consideration of carpooling.

2 - Construction deliveries were converted to Passenger Car Equivalent (PCE), assuming 1 truck equals to 3 passenger cars. During the Peak Project Construction Month, there are 50 (actual) trucks delivering on-site each day converted to 150 PCE resulting in 300 daily (combined in/out) one-way trips. It was assumed that up to 20 percent of the deliveries (60 trips) occur during the AM peak hours and the remaining deliveries are expected to occur during the non-peak traffic period (avoiding the 4:00– 6:00 PM peak hours).

3 - Water truck deliveries were converted to Passenger Car Equivalent (PCE), assuming 1 truck equals to 3 passenger cars. In the event that on-site groundwater is not available and trucking water to the Project site is necessary, there are an estimated 109 (actual) trucks delivering on-site each day converted to 327 PCE resulting in 654 daily (combined in/out) one-way trips. It was assumed that 100 percent of the water truck deliveries would occur during non-peak traffic periods (avoiding the 7:00–9:00 AM and 4:00–6:00 PM peak hour periods).

The majority of the construction workforce for the Project is expected to be drawn from the surrounding local and regional areas, including the Blythe and Indio areas (e.g., Coachella, Thermal, and Mecca), and the Arizona areas of Quartzite and Ehrenberg. Due to the length of the daily commute to the Project site from population centers, it is expected that the construction workers would be temporarily housed in either the Blythe or Indio areas, both of which have access to the Project area using I-10. The analysis assumed that approximately 80 percent of the construction traffic, including workers, equipment, and water, would access the Project area from the east, and approximately 20 percent would access the Project area from the west.

The peak year LOS for the intersections is presented in Table 3.17-2. The peak year shows that the intersections all operate at LOS A. The peak hour LOS conditions at the same intersections during construction are presented in Table 4.17-2.

Table 4.17-2 shows that, in the absence of APM TRA-1, the level of service at the SR-78/16th Avenue intersection would degrade to LOS F. As shown in Table 4.17-1, trips for deliveries of materials are assumed to occur during the AM peak hours, or during off-peak hours (i.e., the Applicant would schedule deliveries to avoid the PM peak hours). As a result, the impact identified in Table 4.17-2 is driven entirely by worker commuting vehicles, and is not affected by trips to deliver materials and equipment. As discussed in Section 4.17.2, APM TRA-1 would require the Applicant to control traffic leaving the Project area during the PM peak hours to a

level that would ensure the LOS at the SR-78/16th Avenue intersection would be LOS D or better. Mitigation Measure TRN-3 would modify the APM to further reduce the number of worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. In addition, Mitigation Measure TRN-4 would require paving of 16th Avenue/Seeley Avenue and improvement of the intersection of SR-78/16th Avenue to allow a turning lane from 16th Avenue onto SR-78. These improvements would facilitate traffic flow at the intersection, further improving the Level of Service.

Table 4.17-2. Peak Hour Intersection Level of Service in Peak Year Construction Conditions[1]

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Average Delay (seconds per vehicle)	LOS	Average Delay (seconds per vehicle)
SR-78 (Neighbours Blvd)/I-10 WB ramps	A	9.7	A	9.2
SR-78 (Neighbours Blvd)/I-10 EB ramps	A	9.0	B	12.8
SR-78 (Neighbours Blvd)/14th Avenue	A	9.9	D	31.9
SR-78 (Neighbours Blvd)/16th Avenue	A	9.9	F	78.2

Source: URS 2016b
Note:
1 – Analysis assumes APM TRA-1 is not in place.

The peak year LOS for the four Project roadway segments in presented in Table 3.17-3. The peak year shows that the roadways (I-10, SR-78, and 16th Avenue) operate at LOS C. The LOS conditions for the roadway segments during construction are presented in Table 4.17-3.

Table 4.17-3. Roadway Segment Level of Service in peak year Construction Conditions

Roadway	Segment	Cross-section Classification	Peak Year + Project Construction Average Daily Traffic	Roadway Capacity	Truck Percent	LOS
I-10	West of Mesa	4-Lane Freeway	28,380	68,900	38%	C
I-10	East of SR-78	4-Lane Freeway	31,164	68,900	37%	C
SR-78	South of I-10	2-Lane	4,847	16,200	30%	C
16th Avenue	West of SR-78	2-Lane Collector	2,700	11,700	30%	C

Source: URS 2016b

Table 4.17-3 shows that, although traffic would increase, the LOS on the freeway and roadways would continue to operate at an acceptable level (LOS C) during Project construction. Although construction traffic would be more noticeable on local roads (e.g., SR-78 and 16th Avenue), the increased traffic volumes would remain at levels less than the carrying capacity of these two-lane

roads, which is approximately 12,000 to 16,000 vehicles per day. Because increases in traffic associated with Project construction activities would not be substantial relative to peak year conditions, the Project would not affect traffic conditions over the course of a workday. Furthermore, I-10 has sufficient capacity to accommodate Project construction-related traffic while maintaining acceptable LOS during the peak-hour periods.

Operations

Project operations would generate minimal traffic. As discussed in Section 2.3.5, Project operation and maintenance activities are expected to require approximately 5 permanent, full-time personnel who would operate in two 12-hour shifts, resulting in 10 commuting trips per day. An estimated 10 trips per day would occur for the delivery of materials. Additional workers may be onsite during ad-hoc activities, such as panel washing. The number of additional trips associated with these activities is expected to be minimal and would not have an adverse impact on transportation and traffic.

As with construction, operation and maintenance of the gen-tie line may also periodically necessitate the temporary closure of route 660703. Because route 660703 is an open route, temporary closure of the route would affect OHV and other users. Potential impacts would be reduced through implementation of APM TRA-2, as modified by Mitigation Measure TRN-1, which would require a Traffic Monitoring and Control Plan to limit impacts associated with temporary road closures. To further reduce temporary impacts to access on this route, Mitigation Measure REC-2 would require the Applicant to coordinate with BLM to temporarily close route 660703 if needed during maintenance of the gen-tie line.

Decommissioning

Similar to construction, decommissioning of most of the Project facilities would occur almost entirely onsite, and would not affect any roads other than the six open BLM routes that would be closed for the entire duration of the Project. As with construction, decommissioning of the gen-tie line may also necessitate the temporary closure of route 660703. Because route 660703 is an open route, temporary closure of the route would affect OHV and other users. Potential impacts would be reduced through implementation of APM TRA-2, as modified by Mitigation Measure TRN-1, which would require a Traffic Monitoring and Control Plan to limit impacts associated with temporary road closures. To further reduce temporary impacts to access on this route, Mitigation Measure REC-2 would require the Applicant to coordinate with BLM to temporarily close route 660703 if needed during maintenance of the gen-tie line.

As discussed in Section 2.3.6, decommissioning of the Project is expected to take up to a year to complete and require a workforce smaller than that associated with construction. For purposes of this analysis, it is assumed that the commuting workforce and number of truck trips is approximately half of the number associated with construction. Because the number of workers and trucks required during Project decommissioning activities would be less than what was required during the peak construction period in the peak year, increased traffic during decommissioning would have less effect on traffic conditions than during peak construction, and traffic flow at the intersections and roadways would operate at acceptable conditions during decommissioning.

4.17.3.2 Alternative 2: Resource Avoidance Alternative

Construction, Operations, and Decommissioning

Because the workforce and number of equipment trips for construction, operation, and decommissioning of Alternative 2 would be the same as that for the Proposed Action, daily worker commuting and haul truck trip volumes are also anticipated to be the same. Therefore, the impact of Alternative 2 on the LOS for roadways and intersections would be the same as the Proposed Action.

In the absence of APM TRA-1, the level of service at the SR-78/16th Avenue intersection would degrade to LOS F under Alternative 2. As discussed in Section 4.17.2, the Applicant proposes to control traffic leaving the Project area during the PM peak hours to a level that would ensure the LOS at the SR-78/16th Avenue intersection would be LOS D or better. Mitigation Measure TRN-3 would modify APM TRA-1 to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. In addition, Mitigation Measure TRN-4 would require paving of 16th Avenue/Seeley Avenue and improvement of the intersection of SR-78/16th Avenue to allow a turning lane from 16th Avenue onto SR-78. These improvements would facilitate traffic flow at the intersection, further improving the Level of Service.

4.17.3.3 Alternative 3: Reduced Project Alternative

Construction, Operations, and Decommissioning

The workforce for construction, operation, and decommissioning of Alternative 3 would be the same as that of the Proposed Action. The total number of trips required to deliver materials and equipment for construction would be 10,800, lower than the 14,400 total trips required for the Proposed Action and Alternative 2. As discussed in Section 4.17.3.1, the adverse impact of construction traffic at intersection of SR-78 and 16th Avenue is driven entirely by worker commuting vehicles, and is not affected by trips to deliver materials and equipment. Therefore, although the reduction in delivery trips by about three-quarters would reduce impacts at the intersections, the adverse impact associated with commuting workers in the PM peak hours would still result in lowering the level of service to LOS F at the SR-78 intersection with 16th Avenue under Alternative 3. As discussed in Section 4.17.2, the Applicant proposes to control traffic leaving the Project area during the PM peak hours to a level that would ensure the LOS at the SR-78/16th Avenue intersection would be LOS D or better. Mitigation Measure TRN-3 would modify APM TRA-1 to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. In addition, Mitigation Measure TRN-4 would require paving of 16th Avenue/Seeley Avenue and improvement of the intersection of SR-78/16th Avenue to allow a turning lane from 16th Avenue onto SR-78. These improvements would facilitate traffic flow at the intersection, further improving the Level of Service.

4.17.4 Application of CEQA Significance Thresholds

TRA-1) Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking

into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

As shown in Table 4.17-2, construction of Alternatives 1 or 2 would result in operation of the intersection of SR-78 and 16th Avenue at a LOS F during peak PM hours, in the absence of APMs. This reduction in LOS would exceed the thresholds established in the Riverside County CMP and Riverside County General Plan, and would constitute a significant impact. Implementation of APM TRA-1 would reduce the number of vehicles leaving the Project to a level that allows the intersection of SR-78 and 16th Avenue to operate at LOS D. The measure would also improve the LOS at the intersection of SR-78 and 14th Avenue. However, even with implementation of APM TRA-1, the Project would result in LOS D, which would still not comply with the Riverside County General Plan target of LOS C along County-maintained roads and state highways. According to the Riverside County Traffic Impact Analysis Preparation Guide (Riverside County 2008), when Project traffic, added to existing traffic, will deteriorate the LOS to below the target LOS, and impacts are not mitigated, the impact is considered significant. Mitigation Measure TRN-3 would modify APM TRA-1 to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. In addition, Mitigation Measure TRN-4 would require paving of 16th Avenue/Seeley Avenue and improvement of the intersection of SR-78/16th Avenue to allow a turning lane from 16th Avenue onto SR-78. These improvements would facilitate traffic flow at the intersection, further improving the Level of Service. With implementation of Mitigation Measures TRN-3 and TRN-4, the intersection would conform to the thresholds established in the Riverside County CMP and Riverside County General Plan, and impacts of Alternative 1 or Alternative 2 would be less than significant.

The total number of trips required to deliver materials and equipment for construction of Alternative 3 would be 10,800, lower than the 14,400 total trips required for Alternative 1 and Alternative 2. However, the number of workers would be the same, and therefore the impacts of commuting vehicles on traffic would be the same as that of the Proposed Action. As discussed in Section 4.17.3.1, the adverse impact of construction traffic at intersection of SR-78 and 16th Avenue is driven entirely by worker commuting vehicles, and is not affected by trips to deliver materials and equipment. Therefore, although the reduction in delivery trips by about three-quarters would reduce overall impacts at the intersections, the adverse impact associated with commuting workers in the PM peak hours would still result in lowering the level of service to LOS F at the SR-78 intersection with 16th Avenue under Alternative 3. Even with implementation of APM TRA-1, Alternative 3 would result in LOS D, which would still not comply with the Riverside County General Plan target of LOS C along County-maintained roads and state highways. According to the Riverside County Traffic Impact Analysis Preparation Guide (Riverside County 2008), when Project traffic, added to existing traffic, will deteriorate the LOS to below the target LOS, and impacts are not mitigated, the impact is considered significant. Mitigation Measure TRN-3 would modify APM TRA-1 to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. In addition, Mitigation Measure TRN-4 would require paving of 16th Avenue/Seeley Avenue and improvement of the intersection of SR-78/16th Avenue to allow a turning lane from 16th Avenue onto SR-78. These improvements would facilitate traffic flow at the intersection, further improving the Level of

Service. With implementation of Mitigation Measures TRN-3 and TRN-4, the intersection would conform to the thresholds established in the Riverside County CMP and Riverside County General Plan, and impacts would be less than significant.

The impact of construction of Alternatives 1, 2, or 3 on traffic at the other three intersections, and on 16th Avenue, SR-78, and I-10 roadway segments, would be less than significant because they would all operate at LOS C or better.

The impacts of operation of Alternatives 1, 2, 3 are expected to be nominal, and the impacts of decommissioning on traffic would be less than those associated with construction. Alternatives 1, 2, or 3 construction and decommissioning would not have long-term significant traffic impacts on the transportation network, since construction- and decommissioning-related impacts are considered temporary.

TRA-2) Would the Project conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

The RCTC's adopted minimum LOS threshold is LOS E. When a CMP street or highway segment falls to LOS F, a deficiency plan would be required. As shown in Table 4.17-2, construction of Alternatives 1, 2, or 3 would result in operation of the intersection of SR-78 and 16th Avenue at a LOS F during peak PM hours, in the absence of APMs. This reduction in LOS would exceed the thresholds established in the Riverside County CMP, and would constitute a significant impact. However, implementation of APM TRA-1 would reduce the number of vehicles leaving the Project in the afternoon peak hours to a level that allows the intersection to operate at LOS D. With implementation of this APM, the impact on the intersection would not conflict with an applicable congestion management program established by the County congestion management agency for designated roads or highways, and impacts of Alternative 1, 2, or 3 would be less than significant. The impact of Alternatives 1, 2, or 3 operation on traffic at the other three intersections, and on 16th Avenue, SR-78, and I-10 roadway segments, would also be less than significant because they would all operate at LOS D or better.

The impact of Alternatives 1, 2, or 3 operation on traffic would be nominal and Project decommissioning would result in less traffic impacts than Project construction. Therefore, impacts of Alternatives 1, 2, or 3 operations and decommissioning would be less than significant.

TRA-3) Would the Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Alternatives 1, 2, or 3 would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Construction equipment that would be utilized for Alternatives 1, 2, or 3 would not obstruct navigable air space. No impacts would occur.

TRA-4) Would the Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Alternatives 1, 2, or 3 would not require modification of roadways or intersections, or incompatible uses of the public roadways. No impacts would occur.

TRA-5) Would the Project result in inadequate emergency access?

Because 16th Avenue/Seeley Avenue is unimproved and would be subjected to intensive use by trucks, construction could result in degradation of the condition of the road to the extent that it could become unusable by emergency vehicles under Alternatives 1, 2, and 3, resulting in significant impacts to emergency access. To maintain the condition of the road, Mitigation Measure TRN-4 would require that the Applicant pave the segment between Neighbours Boulevard (State Route 78) and the site entrance, a length of approximately 5.6 miles, prior to beginning any other construction activities at the Project area.

The only potential road closure associated with Alternatives 1, 2, or 3 would be temporary closure of route 660703, which is along an existing transmission line, to pull and string the gen-tie line. Because temporary closure of the route could affect emergency access, Mitigation Measure REC-2 would require that the Applicant coordinate the closure with applicable emergency response agencies.

There would be two access routes to the Project area. Primary access for construction and operations would be from Exit 236 off of I-10, following SR-78 and 16th Avenue/Seeley Avenue to the facility gate. A secondary access route would be from 22nd Avenue. The Applicant's Hazardous Materials Management and Emergency Response Plan would comply with applicable Riverside County regulations, and would be coordinated with the Riverside County Fire Department. With paving of the access road, as required through Mitigation Measure TRN-4, and coordination of route closures, as required through Mitigation Measure REC-2, impacts to emergency access under Alternatives 1, 2, or 3 would be less than significant.

TRA-6) Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Alternatives 1, 2, or 3 would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. There are no bicycle or pedestrian facilities in the Project area. Due to the remote location of the Project, bicycling and walking are not major means of transportation, and substantial bicycle or pedestrian use is not projected in the future. Accordingly, Alternatives 1, 2, or 3 would not interfere with bicycle or pedestrian safety.

As shown in Table 4.17-2, construction traffic from Alternatives 1, 2, or 3 would increase delays at intersections on SR-78 (Neighbours Boulevard), which is used as a bus route by the Palo Verde Valley Transit Agency (PVVTA). The additional delay for buses at these intersections would be nominal (around 30 seconds). Therefore, impacts to public transit under Alternatives 1, 2, or 3 would be less than significant.

TRA-7) Would the Project alter waterborne, rail or air traffic?

Alternatives 1, 2, or 3 would not alter waterborne, rail, or air traffic. The Project would not utilize waterborne, rail, or air services to transport materials or the workforce. Therefore, no impacts to waterborne, rail or air traffic would occur.

TRA-8) Would the Project cause an effect, or a need for new or altered maintenance of roads?

As discussed in Section 4.17.3, construction traffic under Alternatives 1, 2, or 3 would cause degradation of 16th Avenue/Seeley Avenue, and could result in making the roadway unpassable for emergency vehicles or local traffic. Such degradation could be significant, requiring increased maintenance for the existing roadway, or construction of new roadway. To maintain the condition of the road, Mitigation Measure TRN-4 would require that the Applicant pave the segment between Neighbours Boulevard (State Route 78) and the site entrance, a length of approximately 5.6 miles, prior to beginning any other construction activities at the Project area. With paving of the access road, as required through Mitigation Measure TRN-4, impacts associated with the need for new roads or increased maintenance of existing roads under Alternative 1, Alternative 2, or Alternative 3 would be less than significant.

Closure of the current access routes to the Mule Mountains could result in increased use, and therefore degradation, of the alternative access roads south and west of the Project area. To ensure that this alternative access is accessible and known to persons wishing to access the area, Mitigation Measure REC-1 requires that the Applicant perform light clearing and grading prior to Project construction, and then periodically as needed during construction, operations, and decommissioning. With maintenance of this alternative access, as required by REC-1, impacts would be less than significant.

TRA-9) Would the Project cause an effect upon circulation during the project's construction?

As shown in Table 4.17-2, construction of Alternatives 1, 2, or 3 would result in operation of the intersection of SR-78 and 16th Avenue at a LOS F during peak PM hours, in the absence of APMs. Implementation of APM TRA-1 would reduce the number of vehicles leaving the site to a level that allows the intersection of SR-78 and 16th Avenue to operate at LOS D. The measure would also improve the LOS at the intersection of SR-78 and 14th Avenue. However, even with implementation of APM TRA-1, Alternatives 1, 2, or 3 would result in LOS D, which would still not comply with the Riverside County General Plan target of LOS C along County-maintained roads and state highways. According to the Riverside County Traffic Impact Analysis Preparation Guide (Riverside County 2008), when Project traffic, added to existing traffic, will deteriorate the LOS to below the target LOS, and impacts are not mitigated, the impact is considered significant. Mitigation Measure TRN-3 would modify APM TRA-1 to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. In addition, Mitigation Measure TRN-4 would require paving of 16th Avenue/Seeley Avenue and improvement of the intersection of SR-78/16th Avenue to allow a turning lane from 16th Avenue onto SR-78. These improvements would facilitate traffic flow at the intersection, further improving the Level of Service. With implementation of Mitigation Measures TRN-3 and TRN-

4, the intersection would conform to the thresholds established in the Riverside County CMP and Riverside County General Plan, and impacts would be less than significant.

The impact of Alternative 1, 2, or 3 construction on traffic at the other three intersections, and on 16th Avenue, SR-78, and I-10 roadway segments, would be less than significant because they would all operate at LOS C or better.

The impacts of Alternative 1, 2, or 3 operations are expected to be nominal, and the impacts of decommissioning on traffic would be less than those associated with construction. Alternatives 1, 2, or 3 construction and decommissioning would not have long-term significant traffic impacts on the transportation network, since construction- and decommissioning-related impacts are considered temporary.

TRA-10) Would the Project affect bike trails?

There are no bike trails in the Project area. Therefore, there would be no impact under Alternatives 1, 2, or 3.

4.17.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.17 would be maintained. There would be no increase in traffic associated with commuting workers, delivery of materials, or delivery of water, and no impacts to existing on-site routes. Therefore, Alternative 4 would not result in any impacts to transportation and traffic.

4.17.6 Cumulative Impacts

For the purposes of the cumulative analysis of transportation and traffic impacts, only other projects that make or would make a substantial contribution to traffic at the same roadway intersections or segments as the Proposed Action or alternatives are considered.

With respect to the impacts to the I-10 freeway segments, the geographic scope of the cumulative analysis is all projects in eastern Riverside County. Traffic could be affected by any of the projects listed in Tables 4.1-1 and 4.1-2, all of which would involve commuting workers and delivery of materials using I-10 for their primary access. In general, it is only the construction and decommissioning phases of these projects that would have the potential to contribute to cumulative traffic impacts, because the numbers of workers and deliveries associated with operations is nominal compared to the overall traffic volume on I-10. The contribution of operations to traffic impacts is already accounted for in the projected peak year baseline, which assumed a two percent growth per year in ambient conditions. However, the impacts of construction and decommissioning traffic could contribute to adverse cumulative impacts.

With respect to traffic on the SR-78 and 16th Avenue roadway segments, and at the intersections of 14th Avenue and 16th Avenue with SR-78, the geographic scope of the cumulative analysis is limited to the projects that would make a substantial contribution to traffic south of I-10. Based

on a review of the geographic distribution of the cumulative projects in Figure 4.1-1, the only cumulative project that is likely to use SR-78 south of I-10 to support construction, operations, or decommissioning is the BMSP. The other cumulative projects are either located north of I-10, or are located closer to other exits on I-10 rather than the SR-78 exit, and would therefore contribute only minimally to traffic on SR-78 or 16th Avenue south of I-10. Again, because the number of operations workers and deliveries for both the DQSP and BMSP are nominal when compared to the overall volume of traffic on SR-78, the two projects would only contribute to an adverse cumulative impact if their construction and/or decommissioning phases were to be concurrent. The contribution to traffic impacts from operations of these two projects is already accounted for in the projected peak year baseline, which assumed a two percent growth per year in ambient conditions.

With respect to traffic at the intersections (exit ramps) of SR-78 with I-10, the geographic scope of the cumulative analysis is limited to the projects that would use SR-78 for access, either north or south of I-10. Based on a review of the geographic distribution of the cumulative projects in Figure 4.1-1, this is expected to include the BMSP, the Blythe Airport, MSEP, Blythe Airport Solar I Project, Palo Verde Mesa Solar Project, and the Modified BSPP. The other cumulative projects are located closer to other exits on I-10 rather than the SR-78 exit, and would therefore contribute only minimally to traffic at the intersection of SR-78 with I-10. Again, because the number of operations workers and deliveries for these projects are nominal when compared to the overall volume of traffic using the SR-78 interchange with I-10, the projects would only contribute to an adverse cumulative impact if their construction and/or decommissioning phases were to be concurrent. The contribution to traffic impacts from operations of these projects is already accounted for in the projected peak year baseline, which assumed a two percent growth per year in ambient conditions.

The projects listed in Table 4.1-2 have been implemented. Some of these projects existed previously, but are now closed (such as the Kaiser Mine), so they do not contribute to cumulative traffic impacts. Those that are currently in operation contribute ongoing operational traffic to area roadways and intersections. This traffic is already accounted for in the cumulative analysis because it contributes to the existing conditions, and in the projected peak year baseline, discussed in Section 3.17. Because the system is currently operating at an acceptable LOS, and is projected to operate at an acceptable LOS in the peak year, the existing projects do not conflict with established standards of performance of the vehicle circulation system in the area, and have not resulted in cumulatively adverse conditions.

Table 4.1-3 provides a list of reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the County's jurisdiction, and other actions/activities that are considered reasonably foreseeable. The renewable energy and other infrastructure projects would contribute traffic to area roadways and intersections during their own construction, operations, and decommissioning phases.

Alternative 1 – Proposed Action

Construction and Decommissioning

I-10 Freeway Segment

As shown in Tables 3.17-3 and 4.17-3, Project construction would increase the average daily traffic on I-10 east of SR-78 from the peak year base of 29,700 to 31,164, as compared to a roadway capacity of 68,900. The change in traffic on I-10 west of Mesa Drive would be even smaller, from the peak year base of 28,080 to 28,380. An increase in traffic would also be associated with decommissioning of the DQSP, but the increase from decommissioning would be less than the increase associated with construction. As discussed in Section 4.17.3.1, these increases would not result in changing the LOS on this segment from its current LOS C.

Operational levels of traffic from the other projects would be nominal, and also would not result in changing the LOS from C to D. However, concurrent construction and/or decommissioning of other large-scale projects in the I-10 corridor could potentially increase traffic levels to result in LOS D or lower, which would be a significant impact. Although the construction and decommissioning period, workforce, and schedule for the majority of foreseeable future projects are generally unknown, in a worst-case scenario where construction and/or decommissioning peak periods overlapped for all projects proposed in the Project area, the LOS of I-10 could be temporarily degraded, but would not result in any permanent LOS degradation. Given the large difference between the capacity of I-10 and the peak year base average daily traffic (40,520), even a worst-case scenario would not likely exceed the capacity of I-10, which in this area has two lanes in both directions to accommodate the anticipated increase in traffic while maintaining adequate traffic flow along the freeway mainline.

SR-78 Roadway and Intersections

As shown in Tables 3.17-3 and 4.17-3, Project construction would increase the average daily traffic on SR-78 from the peak year base of 2,273 to 4,847, as compared to a roadway capacity of 16,200. The change in traffic on 16th Avenue would be from the peak year base of 126 to 2,700, as compared to a capacity of 11,700. In both cases, the increase would not result in a change of the peak year base LOS C. However, at the intersection of 14th Avenue with SR-78, the PM peak hour average delay would increase from 9.9 to 31.9 seconds/vehicle without mitigation, which would result in a change from the peak year base of LOS A to LOS D. At the intersection of 16th Avenue with SR-78, the PM peak hour average delay would increase from 9.8 to 78.2 seconds/vehicle without mitigation, which would result in a change from the peak year base of LOS A to LOS F, which would constitute a significant impact. Implementation of APM TRA-1 would reduce the number of vehicles leaving the Project during the afternoon peak hours to a level that allows the intersection to operate at LOS D, and would reduce the direct impact of the DQSP on this intersection. Mitigation Measure TRN-3 would modify APM TRA-1 to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. In addition, Mitigation Measure TRN-4 would require paving of 16th Avenue/Seeley Avenue and improvement of the intersection of SR-78/16th Avenue to allow a turning lane from 16th Avenue onto SR-78. These improvements would facilitate traffic flow at the intersection, further improving the Level of Service. An increase in traffic at this interchange would also be associated with decommissioning of the DQSP. The increase in traffic from decommissioning

would be lower than that associated with construction, but could still result in an unacceptable reduction in LOS at the intersection of 16th Avenue and SR-78.

Operational levels of traffic from the BMSP would be nominal, and would likely not result in a further reduction of the LOS at these locations. However, concurrent construction and/or decommissioning of the DQSP and BMSP could potentially increase traffic levels on SR-78 and 16th Avenue to result in LOS D or lower, and would also result in even longer average delays at the intersections. Even with implementation of APM TRA-1, construction or decommissioning traffic from the DQSP would be a considerable contributor to cumulative traffic impacts. Although the construction and decommissioning period, workforce, and schedule for the BMSP is not known, in a worst-case scenario where construction and/or decommissioning peak periods overlapped for DQSP and BMSP, the LOS of SR-78 and 16th Avenue could be temporarily degraded, but would not result in any permanent LOS degradation. Given the large difference between the capacity of SR-78 and 16th Avenue and the peak year base average daily traffic, even a worst-case scenario would not likely exceed the capacity of either roadway segment. However, the increase in the average delay associated with the DQSP is already a significant impact, and would be made even worse when combined with construction or decommissioning traffic from BMSP.

I-10/SR-78 Interchange

As shown in Tables 3.17-2 and 4.17-2, the contribution of construction traffic from DQSP would have only a minor effect on the average delay at the eastbound and westbound ramps to I-10. The AM peak hour average delay at the westbound ramp would increase from 9.2 to 9.7 sec/veh, but the LOS would remain at the peak year base of LOS A. The PM peak hour average delay at the eastbound ramp would increase from 9.4 to 12.8 sec/veh, which would result in a change from the peak year base of LOS A to LOS B, which would be a less than significant impact.

Operational levels of traffic from the other projects would be nominal, and likely would not result in changing the LOS lower than LOS B. However, concurrent construction and/or decommissioning of the DQSP and the other projects which use SR-78 for access could potentially increase traffic levels at the interchange to result in LOS D or lower, which would be a significant impact. Although the construction and decommissioning period, workforce, and schedule for the other projects is not known, in a worst-case scenario where construction and/or decommissioning peak periods overlapped for DQSP and the other projects, the LOS of the interchange could be temporarily degraded, but would not result in any permanent LOS degradation.

Summary

The DQSP is not expected to be a considerable contributor to cumulatively significant traffic impacts on the I-10, SR-78, or 16th Avenue roadway segments. I-10 west and east of SR-78 would operate at LOS C, and SR-78 and 16th Avenue would operate at LOS A. With the construction of the cumulative projects and DQSP, it is anticipated that the freeway would operate within Caltrans' acceptable LOS level.

The Project would contribute to traffic impacts at the SR-78 interchange with I-10. Impacts of the Project itself would be significant without mitigation, and the magnitude of the cumulative impact would depend on how many projects were undergoing concurrent construction or decommissioning. If enough projects are undergoing construction or decommissioning to result

in a cumulatively considerable traffic impact at the interchange, the DQSP would be a contributor, but would not likely be a considerable contributor, to the cumulative traffic impact.

On its own, without mitigation, Project construction would cause significant traffic impacts at intersections of 14th Avenue and 16th Avenue with SR-78. These impacts would be reduced through implementation of APM TRA-1, which would reduce the number of vehicles leaving the Project to a level which allows the intersections to operate at LOS D or better. However, impacts at the 16th Avenue intersection would still be significant. Mitigation Measure TRN-3 would modify APM TRA-1 to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. In addition, Mitigation Measure TRN-4 would require paving of 16th Avenue/Seeley Avenue and improvement of the intersection of SR-78/16th Avenue to allow a turning lane from 16th Avenue onto SR-78. These improvements would facilitate traffic flow at the intersection, further improving the Level of Service. With implementation of Mitigation Measures TRN-3 and TRN-4, the intersection would conform to the thresholds established in the Riverside County CMP and Riverside County General Plan, and impacts would be less than significant. If the BMSP should undergo concurrent construction, the cumulative impact at these intersections would likely be significant, even with implementation of APM TRA-1 and Mitigation Measure TRN-3 and TRN-4, and the DQSP would be a considerable contributor to these cumulative traffic impacts.

APM TRA-1 and Mitigation Measures TRN-3 and TRN-4 would reduce the Project's construction-related contribution to cumulative traffic impacts. Based on the short-term nature of construction, any increase in vehicle trips and transportation-related impacts would be temporary. However, even with implementation of the APMs during construction of the Project, implementation of a Coordinated Transportation Management Plan is recommended to reduce the Project's contribution to any potential traffic impacts to the surrounding network. With implementation of BMPs and mitigation measures, impacts to traffic and transportation would be minimized. Implementation of Mitigation Measure TRN-2, Coordinated Transportation Management Plan, would require the Applicant to address the transportation impact of the multiple overlapping construction projects within the vicinity of the Project in the region. TRN-2 would also require the Applicant to develop and implement protocols for updating the Coordinated Transportation Management Plan to account for delays or changes in the schedules of individual projects. With implementation of Mitigation Measure TRN-2, cumulative traffic impacts to the intersections would likely be improved to acceptable LOS levels. Therefore, the Project's contribution towards temporary, significant cumulative impacts during Project construction would be reduced to a level that is less than significant.

The Project would not result in a change to air traffic patterns (impact TRA-3), would not affect emergency access (impact TRA-5), would not affect public transit (impact TRA-6), would not affect waterborne, rail, or air transportation (impact TRA-7), and would not affect bike trails (impact TRA-10). The Project would not have design features which would increase hazards (impact TRA-4) on existing roads.

Operation and Maintenance

As discussed in Section 4.17.3.1, Project operations would generate minimal traffic. Project operation and maintenance activities are expected to require approximately 5 permanent, full-time personnel who would operate in two 12-hour shifts, resulting in 10 commuting trips per

day. An estimated 10 trips per day would occur for the delivery of materials. Additional workers may be onsite during ad-hoc activities, such as washing of panels, but the number of additional trips associated with these activities is expected to be minimal. Overall, operations of the DQSP are expected to add fewer than 20 daily trips to a roadway (16th Avenue) which would have an estimated 126 trips during the peak year base, as compared to a capacity of more than 11,000 vehicles. Even if concurrent projects contributed traffic to the roadway segments and intersections to the extent that a cumulatively significant impact would occur, the contribution of the Project to that impact would not be cumulatively considerable.

Alternative 2 – Resource Avoidance Alternative

As discussed in Section 4.17.3.2, the workforce and number of equipment trips for construction, operation, and decommissioning of Alternative 2 would be the same as that for the Proposed Action. Therefore, daily worker commuting and haul truck trip volumes are also anticipated to be the same. Therefore, the contribution of Alternative 2 to cumulative traffic impacts on the LOS for roadways and intersections would be the same as those described for the Proposed Action.

Alternative 3 – Reduced Project Alternative

As discussed in Section 4.17.3.3, the workforce for construction, operation, and decommissioning of Alternative 3 would be the same as that of the Proposed Action. However, the total number of trips required to deliver materials and equipment for construction would be 10,800, lower than the 14,400 total trips required for the Proposed Action and Alternative 2. The adverse impact of construction traffic at intersection of SR-78 and 16th Avenue is driven entirely by worker commuting vehicles, and is not affected by trips to deliver materials and equipment. Therefore, although the reduction in delivery trips by about three-quarters would reduce impacts at the intersections, the adverse impact associated with commuting workers in the PM peak hour would still result in lowering the level of service to LOS F at the SR-78 intersection with 16th Avenue under Alternative 3. Therefore, the contribution of Alternative 3 to cumulative traffic impacts on the LOS for roadways and intersections would be the same as those described for the Proposed Action.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. Alternative 4 would not contribute to cumulative transportation and traffic impacts.

4.17.7 Residual Impacts

The direct impacts of the Project on transportation and traffic are associated with the Project construction and decommissioning phases, each of which would be temporary. Construction would occur for a period of 25 to 48 months, and decommissioning would occur for a period of less than one year. Implementation of APM TRA-1 would reduce the number of vehicles leaving the Project to a level which allows the intersection of 16th Avenue and SR-78 to operate at LOS D. With implementation of this APM, the impact on the intersection would still not be reduced to

a level less than significant. Mitigation Measure TRN-3 would modify APM TRA-1 to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. In addition, Mitigation Measure TRN-4 would require paving of 16th Avenue/Seeley Avenue and improvement of the intersection of SR-78/16th Avenue to allow a turning lane from 16th Avenue onto SR-78. These improvements would facilitate traffic flow at the intersection, further improving the Level of Service. With implementation of Mitigation Measures TRN-3 and TRN-4, the intersection would conform to the thresholds established in the Riverside County CMP and Riverside County General Plan, and impacts would be less than significant.

The contribution of the Project to cumulative traffic impacts would be temporary. The operational trips associated with all of the cumulative projects would be nominal, as compared to the overall traffic volumes at these locations. Therefore, it is anticipated that the LOS for any of the roadway segments or intersections would be restored back to preconstruction conditions once construction of the projects is completed.

4.18 Utilities and Public Services

4.18.1 Methodology for Analysis

To evaluate water availability, the Applicant developed an analysis of groundwater availability in support of the Project (URS 2016a). Water demands of the Project are discussed in Chapter 2, *Proposed Action and Alternatives*, and in Section 3.18, *Utilities and Public Services*. An analysis of the effect of the proposed water use on regional groundwater resources is provided in Section 4.20, *Water Resources*. The Project's water demands were evaluated in comparison with the available water supply and historic regional water consumption levels.

The hazardous and non-hazardous wastes expected to be generated by the Project were evaluated in terms of local landfill capacity and compliance with applicable laws, ordinances, regulations, and policies, for solid wastes. The state and local environmental requirements listed in Section 3.18, *Utilities and Public Services*, have been established to ensure the safe and proper management of applicable wastes in order to protect human health and the environment.

Impacts to natural gas and electricity supplies were evaluated based on the potential for the Project to use these services, or to otherwise interfere with their delivery to other customers. Stormwater management impacts were evaluated based on the potential for the Project to interfere with publicly-operated stormwater management systems. Impacts to public services and facilities such as schools, hospitals, and emergency response capability were evaluated based on the potential for the Project to interfere with delivery of these services to others in the community.

4.18.1.1 CEQA Significance Criteria

The criteria used to determine the significance of the Project-related impacts to utilities and public services are based on the criteria identified in the state CEQA Guidelines, Appendix G. Project-related impacts would be considered significant if they:

USS-1) Result in substantial adverse environmental impacts associated with the provision of utility services. Substantial adverse environmental impacts may occur if the Project would:

1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
3. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
4. Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.
5. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

6. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
7. Fail to comply with Federal, state, and local statutes and regulations related to solid waste.

PS-1) Result in substantial adverse physical impacts associated with the provision of new or physically altered facilities to provide public services.

The following additional significance criteria from the County of Riverside Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

USS-2) Impact the following facilities requiring or resulting in the construction of new facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.

1. Electricity
2. Natural gas
3. Communications systems
4. Stormwater drainage
5. Street lighting
6. Maintenance of public facilities, including roads
7. Other government services

USS-3) Conflict with any adopted energy conservation plans.

4.18.2 Applicant-Proposed Measures

There are no APMs to address potential effects to utilities and public services.

4.18.3 Direct and Indirect Impacts

4.18.3.1 Alternative 1: Proposed Action

Construction, Operation, and Maintenance

Water Supply and Water Availability

As discussed in Sections 2.3.3.8 and 3.18.1.1, the Applicant would require a water source to supply water for use during construction and operations. There is no public water supply system in the Project area, and other water sources such as reclaimed water or surface waters would require entitlement. Therefore, the Project's water needs would either be met by onsite groundwater wells, or by water delivered to the Project by truck. This Draft PA/EIS/EIR analyses both potential scenarios.

An analysis of the effect of the potential production of water from onsite wells on regional groundwater resources is provided in Section 4.20, *Water Resources*. The Project's water demands were evaluated in comparison with the available water supply and historic regional water consumption levels. The Applicant estimates that the 25-month construction timeframe

would require a total of approximately 1,400 AF of water, or 700 AFY, and that a 48-month construction timeframe would require approximately 1,800 AF of water, or 450 AFY. The Applicant estimates that operations would require up to 38 AFY, including 18 AFY for panel washing, and 20 AFY for other combined purposes. Assuming the use of 1,800 AF for construction, and a 30-year operations period, Project construction and operation would require a total of 2,940 AF of water.

As discussed in Section 3.20, *Water Resources*, onsite wells would access groundwater from within the Palo Verde Mesa Groundwater Basin (PVMGB), which directly underlies the Project site. The PVMGB is hydrologically continuous with the Palo Verde Valley Groundwater Basin (PVVGB). Therefore, both basins are considered together in support of the water supply assessment, for the purposes of evaluating potential water supply availability. The two basins are collectively referred to as the combined Palo Verde Groundwater Basin (PVGB) throughout the remainder of this section. Whether the source of the water is onsite groundwater wells or offsite supply brought to the Project by trucks, the source of the water is expected to be from within the PVGB. Therefore, the following analysis of water availability in the PVGB applies to both scenarios.

An evaluation of the groundwater availability and potential impacts to nearby groundwater users was conducted by the Applicant in support of the Project (URS 2016d). Table 3.20-1 presents the estimated annual groundwater budget for the PVGB. The California DWR estimates that the total groundwater storage capacity in the PVGB is approximately 6,840,000 AF, and the estimated recharge and outflow is approximately 426,600 AFY. The largest component of outflow of groundwater from the PVGB is discharge to the Palo Verde Irrigation District (PVID) drains, which return the water to the Colorado River. The drains comprise approximately 83.7 percent (357,000 AFY) of the total 426,600 AFY outflow from the PVGB. An additional 50,000 AFY (another 11.7 percent) is returned from the groundwater to the river through groundwater discharge in gaining sections of the river. The remaining 19,600 AFY (or approximately 4.6 percent) is pumped for use in agriculture (3,600 AFY), for municipal or domestic use (7,500 AFY), or lost through evapotranspiration by native riparian vegetation (8,500 AFY). In addition, the water level in the PVMGB has generally remained stable over the past few decades, except in areas immediately adjacent to some pumping wells (AECOM 2009). The relatively stable groundwater levels that have been measured over this period suggest that existing groundwater withdrawal from the underlying aquifer has not significantly changed the water balance within the PVMGB.

Project construction and operation would require a total of approximately 2,940 AF of water over the construction period plus the 30-year operation period. This volume of water represents about 0.04 percent of the total groundwater storage (6.84 million AF) available in the PVGB. The maximum annual use of 700 AFY represents 0.16 percent of the annual groundwater balance in the basin, and approximately 6.3 percent of the 11,100 AFY that is withdrawn from the basin to support agriculture, municipal, and domestic uses. That level of water use would occur only temporarily during the 25 month construction period, and would then be reduced to 38 AFY, which represents 0.3 percent of total agriculture, municipal, and domestic uses during Project operations. No water would be used to irrigate landscaping.

The Project would not access water from a public water supply system, and would therefore not have any impacts on existing public water supply systems. The onsite water system would be designed and constructed to meet just the needs of the Project, and would be classified as a non-

community, non-transient water system because the Project's water system would only provide water for use by onsite employees and to support solar plant operation and maintenance. Based on the temporary nature of the water use during construction, and the small volume of the proposed water use compared to overall water availability and water use for other purposes, the potential effects of water use on the public water supply would be minimal over the life of the facility.

Solid Waste Management

As described in Section 2.3.7.1, the Project would generate solid waste during construction, operation, and maintenance. All handling and processing of solid and hazardous wastes during construction and operations would be in accordance with applicable regulatory requirements as described in Appendix D, Section D.18. Solid waste would include various construction materials and worker-generated waste that would include a combination of recyclable and non-recyclable materials. Excess materials and wastes would be recycled or resold to the maximum extent practicable. Non-recyclable, non-hazardous solid waste materials would be landfilled in accordance with state and local regulations.

The Riverside County Waste Management Department operates six landfills. There is also a privately-operated landfill within the County (El Sobrante Landfill), and five privately-operated transfer stations open to the public. The nearest landfills that serve the Project area include the Blythe Landfill at 1000 Midland Road, which is approximately 17 miles north of the Project site, and Desert Center Landfill at 17-991 Kaiser Road in Desert Center, which is approximately 40 miles west of the Project site.

The Solid Waste Facility Permit for the Blythe landfill, issued in 2011, estimates that the landfill had more than 4 million cubic yards of capacity remaining out of a total capacity of about 6 million cubic yards, and that the estimated closure year for the landfill is 2047 (CalRecycle 2016). As shown in Table 2-2, the total estimated volume of construction debris that may be sent to landfills for disposal is 14,328 cubic yards. Therefore, sufficient capacity is anticipated to be available for waste disposal.

Natural Gas and Electricity

The Project would not use or interfere with any natural gas supplies.

Power to support Project construction and operations would be supplied by connecting the site to the existing SCE local distribution system. The closest interconnection point to that system is located approximately one mile north of the Project site. Once constructed, the Project would result in the generation of electricity. Transmission of generated electricity would be facilitated by connection to the existing CRSS. It is anticipated that the CRSS has capacity sufficient to convey power from the Project, even in combination with other anticipated solar power projects along the I-10 corridor.

Stormwater Management Systems

There are no stormwater management facilities on the Project site. As discussed in Section 4.20, the Project would result in only very minor changes in stormwater flows leaving the site. Therefore, the Project would not affect the operation or function of existing stormwater management facilities, and would not require the expansion or modification of such facilities.

Public Services and Facilities

Because construction would occur only for a period of 25 to 48 months, and operations would require only five full-time workers, it is unlikely that the Project would substantially increase the long-term local population. The local population would temporarily increase during construction, but this increase is not expected to require construction of new or alteration of existing physical facilities to support education, law enforcement, recreation, medical case, or emergency response services.

The proposed Project would change the land use for the Project area from undeveloped and former agricultural lands to an electrical facility and gen-tie lines. The new facility may require new capability to handle technical rescues at electrical facilities, such as confined space/trench rescue/high angle rescue. These capabilities may require increased staffing, training, and specialized rescue equipment. Additional equipment, in turn, may require additional storage and maintenance capability to ensure optimal performance in the event of an emergency.

Decommissioning

Decommissioning of the Project would involve activities similar to construction, including the use of water and electrical power. In general, the scale of activities would be smaller, and would occur for a shorter duration, than those associated with construction. Therefore, the water use and electrical supply for decommissioning are not expected to impact public services or facilities. During decommissioning, Project facilities would be removed and the approximate original grade restored, so there would be no impact to stormwater flows.

Decommissioning would result in the generation of solid waste. Anticipated solid waste streams include concrete, metal, plastics, and photovoltaic panels. Recyclable materials would be removed from the waste stream and recycled or resold prior to disposal of solid waste in an approved landfill. Solar PV panels would be reused if possible and then recycled at the end of their useful life. Based on the CIWMP for Riverside County, it is anticipated that at least 15 years of capacity would be available in landfills, countywide, at the time of decommissioning. Therefore, sufficient capacity is anticipated to be available to support decommissioning.

4.18.3.2 Alternative 2: Resource Avoidance Alternative

Construction, Operation, and Maintenance

Project activities under Alternative 2 would be similar to those for Alternative 1. Similar to the Proposed Action, Alternative 2 would not result in or require alteration of offsite facilities or services. The total volume of solid waste generated during construction, operation, and maintenance of Alternative 2 would be of similar composition to that discussed for the Proposed Action, but slightly reduced in total volume, and therefore would have a slightly reduced effect on available landfill capacity. Similar to the Proposed Action, waste disposal would comply with applicable laws.

Decommissioning

Decommissioning of Alternative 2 would be similar to that described for the Proposed Action, except that activities would be slightly reduced in size and duration due to the reduced Project area under Alternative 2. Decommissioning of Alternative 2 would not affect the operation or

function of other nearby facilities. Decommissioning would result in the generation of additional solid waste, but in slightly smaller volumes than the Proposed Action. Recyclable materials would be removed prior to disposal in an approved landfill, and similar to the Proposed Action, it is anticipated that sufficient landfill capacity would be available at the time of decommissioning, and decommissioning-related effects would be minimal.

4.18.3.3 Alternative 3: Reduced Project Alternative

Construction, Operation, and Maintenance

Project activities under Alternative 3 would be similar those for Alternative 1. Because Alternative 3 would involve a smaller Project area than Alternatives 1 or 2, all Project-related features and durations are expected to be reduced from those associated with those Alternatives. Construction of Alternative 3 would likely use a reduced amount of water, involve a reduced amount of construction traffic, and occur for a shorter duration than for Alternatives 1 and 2. Similar to the Proposed Action, Alternative 3 would not result in or require alteration of offsite facilities or services. The total volume of solid waste generated during construction, operation, and maintenance of Alternative 3 would be of similar composition to that discussed for the Proposed Action, but reduced in total volume, and therefore would have a reduced effect on available landfill capacity. Similar to the Proposed Action, waste disposal would comply with applicable laws.

Decommissioning

Decommissioning of Alternative 3 would be similar to that described for the Proposed Action, except that activities would be reduced in size and duration due to the reduced acreage of Alternative 3. Decommissioning of Alternative 3 would not affect the operation or function of other nearby facilities. Decommissioning would result in the generation of additional solid waste, but in smaller volumes than the Proposed Action or Alternative 2. Recyclable materials would be removed prior to disposal in an approved landfill, and similar to the Proposed Action, it is anticipated that sufficient landfill capacity would be available at the time of decommissioning, and decommissioning-related effects would be minimal.

4.18.4 Application of CEQA Significance Thresholds

USS-1) Would the Project result in substantial adverse environmental impacts associated with the provision of utility services?

Water and Wastewater

Alternatives 1, 2, or 3 would not require construction or expansion of public water treatment and/or service systems or additional entitlements or resources. These alternatives would use water during construction, either from onsite wells or trucked from offsite sources. Water use during construction would be temporary, and would not require new or expanded water facilities.

Restroom facilities during Alternatives 1, 2, or 3 construction would be provided by portable units to be serviced by licensed providers. During operations, the five workers would use a leach field and septic system. Alternatives 1, 2, or 3 would not exceed wastewater treatment requirements because the Project would not be connected to a public sewer system.

Natural Gas and Electricity

Alternatives 1, 2, or 3 would not involve the use of natural gas service. These alternatives would involve the installation of Project-specific communications cables, but would not interfere with existing services. Power to support construction of Alternatives 1, 2, or 3 would be supplied by generators. Power to support operations would be provided by backfeed power through the On-Site Substation, with long-term backup provided by a temporary diesel generator. No new or altered facilities would be needed. No impacts regarding these respective issues would occur.

Solid Waste Management

All handling and processing of solid and hazardous wastes from Alternatives 1, 2, or 3 would be in accordance with applicable regulatory requirements as described in Appendix D, Section D.18. Solid waste would include various construction materials and worker-generated waste that would include a combination of recyclable and non-recyclable materials. Excess materials and wastes would be recycled or resold to the maximum extent practicable. Non-recyclable, non-hazardous solid waste materials would be landfilled in accordance with state and local regulations. Alternative 1is not expected to generate four or more cubic yards of waste per week during operations, so would not be subject to the recycling requirements of Assembly Bill 1826.

The Solid Waste Facility Permit for the Blythe landfill, issued in 2011, estimates that the landfill had more than 4 million cubic yards of capacity remaining out of a total capacity of about 6 million cubic yards, and that the estimated closure year for the landfill is 2047. As shown in Table 2-2, the total estimated volume of debris from Alternative 1 construction that may be sent to landfills for disposal is 14,328 cubic yards. Therefore, sufficient capacity is anticipated to be available for waste disposal. The solid waste generated during construction, operation, and maintenance of Alternative 2 would be of similar composition to that discussed for Alternative 1, but slightly reduced in total volume, and that for Alternative 3 would be more reduced thank Alternative 2, and therefore would have a reduced effect on available landfill capacity. No impact would occur under any alternative, and no mitigation is recommended.

Stormwater Management Systems

There are no stormwater management facilities on Alternatives 1, 2, or 3. As discussed in Section 4.20, Alternatives 1, 2, or 3 would result in only very minor changes in stormwater flows leaving the site. Therefore, these alternatives would not affect the operation or function of existing stormwater management facilities, and would not require the expansion or modification of such facilities. Therefore, these alternatives would not result in significant environmental effects associated with expansion or modification of such facilities.

PS-1) Result in substantial adverse physical impacts associated with the provision of new or physically altered facilities to provide public services.

Alternatives 1, 2, or 3 would not result in substantial adverse environmental impacts associated with the provision of public services. The majority of the projected construction workforce for Alternatives 1, 2, or 3 would likely seek housing within an hour driving distance of the Project area, or seek temporary housing (such as seasonal, recreational, or occasional use housing; LTVAs; and hotel and motels) during the week and commute home over the weekend. Because construction would be temporary and the size of the operational workforce would be nominal,

Alternatives 1 or 2 would not induce substantial growth of the regional population. The duration of construction of Alternative 3 would be even shorter than for Alternative 1 or Alternative 2. As such, the effect on the existing facilities related to education, law enforcement, fire protection, parks and recreation, and hospital facilities and emergency response would be nominal for Alternatives 1, 2, or 3. Adverse physical impacts to these facilities during are considered to be less than significant and no mitigation is recommended.

USS-2) Would the Project impact the following facilities requiring or resulting in the construction of new facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects?

1. **Electricity**
2. **Natural gas**
3. **Communications systems**
4. **Stormwater drainage**
5. **Street lighting**
6. **Maintenance of public facilities, including roads**
7. **Other government services**

Construction of new utility facilities or the expansion of existing facilities would not be required for construction, operation and maintenance, and decommissioning of Alternatives 1, 2, or 3. Please refer to the previous discussions above under USS-1 with regard to electricity, natural gas, stormwater drainage, education, law enforcement, fire protection, parks and recreation, and hospital facilities and emergency response.

Construction traffic under Alternatives 1, 2, or 3 would cause degradation of 16th Avenue/Seeley Avenue, and could result in making the roadway unpassable for emergency vehicles or local traffic. Such degradation could be significant, requiring increased maintenance for the existing roadway, or construction of new roadway. To maintain the condition of the road, Mitigation Measure TRN-4 would require that the Applicant pave the segment between Neighbours Boulevard (State Route 78) and the site entrance, a length of approximately 5.6 miles, prior to beginning any construction activities at the Project area. With paving of the access road, as required through Mitigation Measure TRN-4, impacts associated with the need for new roads or increased maintenance of existing roads under Alternatives 1, 2, or 3 would be less than significant.

Closure of the current access routes to the Mule Mountains could result in increased use, and therefore degradation, of the alternative access roads south and west of the Project area. To ensure that this alternative access is accessible and known to persons wishing to access the area, Mitigation Measure REC-1 requires that the Applicant perform light clearing and grading prior to Project construction, and then periodically as needed during construction, operations, and decommissioning. With maintenance of this alternative access, as required by REC-1, impacts would be less than significant.

Alternatives 1, 2, or 3 would not require or result in the construction of new street lighting or additional maintenance to public facilities or roads, as construction traffic would be short-term

and occur during daytime hours. The minimal amount of permanent employee vehicle trips on local roadways during Alternatives 1, 2, or 3 operations would not necessitate the expansion or construction of street lighting or cause additional burdens on local roadways resulting in increased maintenance.

USS-3) Would the Project conflict with any adopted energy conservation plans?

The power produced by Alternatives 1, 2, or 3 would produce renewable energy and support the goals of the RPS and would not conflict with adopted energy conservation plans. There would be no impact on any adopted energy conservation plan.

4.18.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.18 would be maintained. There would be no increased water consumption or waste generation, and there would be no impact on the capacity of utilities and service systems to serve demand.

4.18.6 Cumulative Impacts

The geographic scope of the cumulative impacts analysis for water and wastewater is the PVGB. The geographic scope for cumulative solid waste management impacts is the area served by the Blythe Landfill. The geographic scope for analysis of cumulative impacts to stormwater facilities is the surface water drainage basin upstream and downstream of the solar facility. The geographic scope of cumulative impacts to public services and facilities is the area served by those facilities. The temporal scope of each of the cumulative impact analyses includes the construction, operation and maintenance, and decommissioning periods. The cumulative analysis provided here considers implementation of the Project in combination with other past, present, and reasonably foreseeable future projects described in Tables 4.1-1 and 4.1-2.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

As discussed in Section 4.20.6, the past, present, and reasonably foreseeable future projects each contribute to a reduction in groundwater availability in the PVGB. The analysis presented in Section 4.20 was a cumulative analysis, as it evaluated the impact of withdrawals on all known water users in the PVGB. The Project would not represent a noticeable contribution to the total use of groundwater from the PVGB. The contribution of the Project to the cumulative use of water would be temporary during construction, after which the use of water would be minimal.

The analysis of the impact of solid waste management presented in Section 4.18.3.1 above is a cumulative analysis. The projections of landfill capacity developed by the Riverside County Waste Management Department (RCWMD) are cumulative, considering future population growth, projected economic activity, and trends in waste diversion rates. The analysis shows

that the landfill has more than 4 million cubic yards of capacity remaining out of a total capacity of about 6 million cubic yards, and that the estimated closure year for the landfill is 2047. Therefore, sufficient capacity is anticipated to be available for waste disposal for all of the cumulative projects.

Some of the past, present, and reasonably foreseeable projects provide stormwater drainage into drainage canals maintained by the PVID. Stormwater drainage from the Project may eventually enter the PVID drainage system after leaving the Project site and flowing off of the Palo Verde Mesa to the southeast. However, as shown in the hydrologic analysis discussed in Section 4.20.3.1, Project development is not expected to substantially increase the volume of stormwater flow leaving the facility. Therefore, the Project is not expected to result in increased flows in the PVID drain system, and would therefore not contribute to cumulative impacts.

The cumulative projects are not expected to result in substantial adverse environmental impacts associated with the provision of utility services. In general, utility services are designed in consideration of the existing and reasonably foreseeable future projects. Although each of the projects could potentially increase local populations and demand for utility services during their construction phases, any increase would likely be temporary for each project, and would probably not overlap for all projects during the same time period. Because construction of each of the projects would be temporary, and the size of the operational workforces would be nominal, the cumulative projects are not expected to induce substantial growth of the regional population. As such, the cumulative effect on the existing facilities related to electrical and natural gas systems; water and wastewater systems: solid waste; and drainage facilities would be nominal (impact USS-1). The Project would also not require new or expanded facilities for education, law enforcement, fire protection, parks and recreation, and hospital facilities and emergency response (impact USS-2), or conflict with any adopted energy conservation plan (impact USS-3).

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The analysis of groundwater availability in the PVGB presented in Section 4.20 was a cumulative analysis, as it evaluated the impact of withdrawals on all known water users in the PVGB. Because Alternative 2 would use the same amount of groundwater as the Proposed Action, its contribution to cumulative impacts would be the same as the Proposed Action. The contribution of Alternative 2 to the cumulative use of water would be temporary during construction, after which the use of water would be minimal.

The analysis of the impact of solid waste management presented in Section 4.18.3.1 above is a cumulative analysis. The projections of landfill capacity developed by the RCWMD are cumulative, considering all potential sources of waste, including industrial and commercial developments such as solar facilities. The analysis shows that the landfill has more than 4 million cubic yards of capacity remaining out of a total capacity of about 6 million cubic yards, and that the estimated closure year for the landfill is 2047. The solid waste generated during construction, operation, and maintenance of Alternative 2 would be of similar composition to that discussed for the Proposed Action, but slightly reduced in total volume, and therefore would have a reduced effect on available landfill capacity. Therefore, sufficient capacity is anticipated to be available for waste disposal for all of the cumulative projects, including Alternative 2.

Some of the past, present, and reasonably foreseeable projects provide stormwater drainage into drainage canals maintained by the PVID. Stormwater drainage from the Project may eventually enter the PVID drainage system after leaving the Project site and flowing off of the Palo Verde Mesa to the southeast. Alternative 2 would result in only very minor changes in stormwater flows leaving the site. Therefore, Alternative 2 is not expected to result in increased flows in the PVID drain system, and would therefore not contribute to cumulative impacts.

The cumulative projects are not expected to result in substantial adverse environmental impacts associated with the provision of utility services. In general, utility services are designed in consideration of the existing and reasonably foreseeable future projects. Although each of the projects could potentially increase local populations and demand for utility services during their construction phases, any increase would likely be temporary for each project, and would probably not overlap for all projects during the same time period. Because construction of each of the projects would be temporary, and the size of the operational workforces would be nominal, the cumulative projects are not expected to induce substantial growth of the regional population. As such, the cumulative effect on the existing facilities related to electrical and natural gas systems; water and wastewater systems: solid waste; drainage facilities; education; law enforcement; fire protection; parks and recreation; and hospital facilities and emergency response would be nominal.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The analysis of groundwater availability in the PVGB presented in Section 4.20.6 was a cumulative analysis, as it evaluated the impact of withdrawals on all known water users in the PVGB. Because Alternative 3 would less groundwater than the Proposed Action and Alternative 2, its contribution to cumulative impacts would be lower than those of the other action alternatives. The contribution of Alternative 3 to the cumulative use of water would be temporary during construction, after which the use of water would be minimal.

The analysis of the impact of solid waste management presented in Section 4.18.3.1 above is a cumulative analysis. The projections of landfill capacity developed by the RCWMD are cumulative, considering all potential sources of waste, including industrial and commercial developments such as solar facilities. The analysis shows that the landfill has more than 4 million cubic yards of capacity remaining out of a total capacity of about 6 million cubic yards, and that the estimated closure year for the landfill is 2047. The solid waste generated during construction, operation, and maintenance of Alternative 3 would be of similar composition to that discussed for Alternatives 1 and 2, but reduced in total volume, and therefore would have a reduced effect on available landfill capacity. Therefore, sufficient capacity is anticipated to be available for waste disposal for all of the cumulative projects, including Alternative 3.

Some of the past, present, and reasonably foreseeable projects provide stormwater drainage into drainage canals maintained by the PVID. Stormwater drainage from the Project may eventually enter the PVID drainage system after leaving the Project site and flowing off of the Palo Verde Mesa to the southeast. Alternative 3 would result in only very minor changes in stormwater flows leaving the site. Therefore, Alternative 3 is not expected to result in increased flows in the PVID drain system, and would therefore not contribute to cumulative impacts.

The cumulative projects are not expected to result in substantial adverse environmental impacts associated with the provision of utility services. In general, utility services are designed in consideration of the existing and reasonably foreseeable future projects. Although each of the projects could potentially increase local populations and demand for utility services during their construction phases, any increase would likely be temporary for each project, and would probably not overlap for all projects during the same time period. Because construction of each of the projects would be temporary, and the size of the operational workforces would be nominal, the cumulative projects are not expected to induce substantial growth of the regional population. As such, the cumulative effect on the existing facilities related to electrical and natural gas systems; water and wastewater systems: solid waste; and drainage facilities; education; law enforcement; fire protection; parks and recreation; and hospital facilities and emergency response would be nominal.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. Alternative 4 would not contribute to cumulative impacts on utilities and public services.

4.18.7 Residual Impacts

Residual impacts with respect to utilities and public services include increased use of groundwater during construction, and increased disposal volumes for solid waste during the lifetime of the Project, in comparison to the baseline. Total water supply available in the PVGB would be reduced slightly as a result of the Project; however, it is likely that such reductions would not be noticeable. The increases in solid waste disposal are anticipated to be manageable within available landfill capacities. Stormwater drainage conditions would be altered slightly as a result of Project implementation, and would remain altered throughout Project operations. However, this alteration is not expected to impact stormwater drainage systems. Following decommissioning, original Project area topography would be restored, and there would be no residual effects on stormwater flow.

4.19 Visual Resources

This section discusses effects on visual resources that would occur with implementation of the Proposed Action and alternatives, cumulative effects, and mitigation measures to reduce visual contrast. Overall, the DQSP would result in disturbance, and therefore long-term visual alteration, to approximately 3,831 acres of land, nearly all of which has been classified as B and C-Quality scenery. The land altered by the DQSP solar units and gen-tie line is considered to have high visual sensitivity.

4.19.1 Methodology for Analysis

There are two forms of visual analysis associated with the Proposed Action. The first visual analysis is to determine compliance with the Interim VRM Class. The second analysis is to determine the extent of visual impact or change from the existing condition that would result from the Proposed Action or alternatives.

Both analyses are achieved using the BLM Visual Resource Contrast Rating System (H-8431), which provides a method for systematically evaluating the visual contrast between a Proposed Action or alternatives and the existing landscape, including an assessment of ten human and environmental factors (distance, angle of observation, length of viewing time, size and scale, season of use, lighting conditions, recovery time, spatial relationships, atmospheric conditions, and motion). The results of the Visual Contrast Rating analysis provide a means for determining the source of visual contrast that exceeds what is allowable, as defined by the VRM Class Objective, and provides information to describe how the land modification will change the existing visual landscape.

Visual contrast is a measure of divergence in the classic design elements of form, line, color, and texture, and applied to landscapes in accordance with the BLM's Handbook H-8431. Compliance is found when the Proposed Action or an alternative meets the allowable level of visual contrast set by the Interim VRM Class objectives. If the Proposed Action or alternatives are nonconforming, then mitigation measures sufficient to bring the design into compliance would need to be identified and implemented. If a project cannot be mitigated to meet the VRM Class objective, then the application may be denied, or the proposal redesigned or relocated to meet the objective.

The assessment of visual contrast is distinct from conclusions of *visual impact* presented in this section. A measure of visual impact is evaluated by the underlying values of the VRI including changes to scenic quality, sensitivity levels, and visibility that would occur on the ground as a result of the development of the Proposed Action or alternatives.

Under the DRECP, VRM Classifications were established for the Project area. The Project area is designated as VRM Class IV. As an application in the Riverside East SEZ filed before June 30, 2009, the DQSP is not, and will not be, subject to the terms of the DRECP. See section II.3.3.3.5 and page II.3-126 of the DRECP. In addition, the analysis of the Project in this PA/EIS/EIR is based on the visual resource classifications that were in effect on March 6, 2015, the date of the NOI, which was VRM Class III. A discussion of the differences between the CDCA Plan and the DRECP land use allocations, and their effect on the analysis of the Project in this PA/EIS/EIR, is presented in Appendix E.

The DQSP is evaluated for conformance with the following VRM objective:

> **VRM Class III:** The objective of this class is to ***partially retain*** the existing character of the landscape. The level of change to characteristic landscape should be ***moderate***. Management activities may attract attention but ***should not dominate the view of the casual observer***. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Since the overall VRM goal is to minimize visual impacts, mitigation measures are recommended for all adverse contrasts that could be reduced, even if the DQSP or alternatives meet VRM objectives. In addition to visual contrast created in the landscape, the DQSP is analyzed for adverse effects of lighting and glare, as well as temporary construction disturbances.

4.19.1.1 Visual Contrast Rating Process

The degree to which the DQSP adversely affects the visual quality of a landscape relates directly to the amount of visual contrast between it and the existing landscape character. The degree of contrast is measured by separating the landscape into major features (land, water, vegetation, structures) then assessing the contrast introduced by the Project in terms of the design elements of form, line, color, and texture. The contrast of the DQSP with landscape elements then is rated as none, weak, moderate, or strong, as defined in Table 4.19-1. The purpose of this method is to reveal elements and features that cause the greatest visual contrast, and to guide efforts to reduce the visual impact of a proposed action or activity. This process is described in detail in Handbook H-8431-1, Visual Resource Contrast Rating (BLM 1986), and documented using BLM Form 8400-4.

The criteria for visual contrast are aligned with the management objectives for each Interim VRM Class. For example, if a project results in a weak visual contrast, it is likely to be in conformance with Interim VRM Class II, whereas a project that results in a moderate contrast would likely be in conformance with VRM Class III objectives but would not conform to VRM Class II objectives.

Table 4.19-1. Visual Contrast Ratings

Degree of Contrast	Criteria	Consistent with…
None	The element contrast is not visible or perceived.	VRM Class I - IV
Weak	The element contrast can be seen but does not attract attention.	VRM Class II - IV
Moderate	The element contrast begins to attract attention and begins to dominate the characteristic landscape.	VRM Class III - IV
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.	VRM Class IV only

4.19.1.2 Selection of Key Observation Points

The contrast rating is completed from the most critical viewpoints, or Key Observation Points (KOPs). The intent of establishing KOPs is to visualize the contrast created by the Proposed Action from locations most representative of how the public perceives the affected landscape. The "public" may include highway travelers, travelers on local roads, residents in surrounding interspersed private lands, OHV users, dispersed recreation users in surrounding wilderness areas, or users of BLM facilities, such as LTVAs. The sensitivity of these diverse user groups to changes in the landscape are influenced by a number of factors, including how prominent the view of the Proposed Action is (in terms of scale, distance, and angle of observation), the frequency and duration that viewers are exposed to the view, and whether the viewer groups are aware of their surroundings (BLM 1986).

Based on the above factors and in consultation with BLM staff, eight KOPs (see Figure 3.19-1) were selected to evaluate the change of visual contrast between DQSP site's existing conditions and proposed altered conditions. No KOPs were selected in the surrounding BLM wilderness areas because accessibility is limited, the level of use is low, and the DQSP would likely not be visible from the wilderness lands. The location and characteristics of each KOP are summarized in Table 4.19-2.

Table 4.19-2. KOP Locations and Characteristics

ID	Name	Viewer Geometry	View Distance and Direction	Viewer Type	Visual Exposure Description
KOP 1a-h	Interstate 10	At-grade	0.5-15 miles northwest to northeast	Motorists	Numerous travelers potentially exposed to foreground views of PV arrays and background views of transmission towers. Views are temporary/intermittent.
KOP 2	Chuckwalla Desert Tortoise ACEC	At-grade	5.0 miles west	Recreationists	Middleground and background views for recreationists within the Desert Tortoise ACEC, with potential views of solar arrays as well as taller Project infrastructure (transmission towers, anemometer, and 34.5 kV poles). Views are sustained/intermittent.
KOP 3	McCoy Mountains	Superior	0.5 miles north	Recreationists	Foreground/middleground views across the Palo Verde Valley for dispersed recreationists. Views are sustained/intermittent.
KOP 4	Mule Mountains	Superior	1.0 miles south	Recreationists	Foreground/middleground views for recreationists. Views are sustained/intermittent.
KOP 5	Bradshaw Trail	At-grade	4.0 miles south	Recreationists	Foreground/middleground, and background views for recreationists on the trail with potential foreground views of PV Arrays, background views of transmission towers. Views are intermittent.

Table 4.19-2. KOP Locations and Characteristics

ID	Name	Viewer Geometry	View Distance and Direction	Viewer Type	Visual Exposure Description
KOP 6	Nicholls Warm Springs/Mesa Verde	At-grade	1.0 miles north	Residents	Foreground/middleground views for transient and long-term (resident) viewers. Views are sustained.
KOP 7	Community of Ripley	At-grade	6.0 miles southeast	Residents	Background views for long-term (resident) viewers. Views are sustained.
KOP 8	Colorado River	At-grade	12.0 miles southeast	Recreationists	Background views for recreationists along/within the river. Views are sustained.

These KOPs were chosen to represent a mix of user types and viewer experiences. The visual contrast created by the DQSP is rated using simulations from each of these KOPs, and is used to represent the visual change experienced from different locations and viewer types.

4.19.1.3 Visual Simulations

Visual simulations were prepared for a subset of KOPs that represented various viewer positions and related visibility of the Project. Visual simulations were prepared for five KOPs: 1c, 2, 3, 4, and 7. For KOPs 1a, b, d-h, 5, 6, and 8, assumptions were made regarding the level of visual contrast expected rather than using visual simulations to determine effects. Visual simulations were prepared for the operational phase of the Project only; no construction visual simulations were prepared.

The visual simulations were based on a collection of photographs taken using a digital SLR 1:1, 21 megapixel camera to create a panorama that represented the primary vertical and horizontal field of view. Simulations were prepared using a true-to-scale digital 3D model of the Project and spatial data indicating locations of Project features. The Applicant provided Project design-related specifications used in the model. Professional grade survey instruments were used to identify locations of KOPs as well as target objects used for accurate alignment of the 3D model to the photography. Land contour data was used to generate a 3D model of the site, into which proposed solar facilities were accurately placed into the individual photo simulation views. Simulations were produced using Autodesk 3D Studio Max Design and Adobe Photoshop. The resulting photo simulation represents the appearance of the Project within the primary human field of view when viewed from a position located 19.7 inches back from the photo.

4.19.1.4 CEQA Significance Criteria

The significance criteria for aesthetics listed in the CEQA Environmental Checklist, Appendix G of the state CEQA Guidelines, were used to assess the significance of visual impacts resulting from the Project. These thresholds indicate that a project could have potentially significant impacts if it would:

VIS-1) Have a substantial adverse effect on a scenic vista.

VIS-2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

VIS-3) Substantially degrade the existing visual character or quality of the site and its surroundings.

VIS-4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The County of Riverside's Environmental Assessment Form includes additional significance criteria, which were used in the analysis. The additional criteria indicate that a project could have potentially significant impacts if it would:

VIS-5) Result in the creation of an aesthetically offensive site open to public view.

VIS-6) Interfere with nighttime use of the Mt. Palomar Observatory, as protected through Riverside County Ordinance No. 655.

VIS-7) Expose residential property to unacceptable light levels.

4.19.2 Applicant-Proposed Measures

Lighting

Lighting on the Project site will be limited to areas required for operations or safety, will be directed onsite to avoid backscatter, and will be shielded from public view to the extent practical. Sensors or switches will control lighting that is not required to be on during nighttime hours.

Measures included in the Applicant's Draft Lighting Management Plan are based on the Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands (BLM 2013), and include:

- Provide design and installation guidelines to minimize night-sky impacts during facility construction and operations;
- Limit lighting for facilities to the minimum number of lights and brightness required for safety and security, and avoid causing excessive reflected glare;
- Use of full cut-off luminaires or directional low spectrum LED fixtures to minimize uplighting and reduce light pollution;
- Direct lights downward or toward the area to be illuminated;
- Avoid use of light fixture designs that would allow spill light beyond the Project boundary;
- Provide lighting in highly illuminated areas that are not occupied on a continuous basis with switches, timer switches, or motion detectors so that the lights operate only when the area is occupied;
- Use of vehicle mounted lights for night maintenance activities, where feasible;
- Consistent with safety and security, wherever feasible, keep lighting off when not in use; and

- Definition of a process for promptly addressing and mitigating complaints about potential lighting impacts.

Color and Reflection

The Project design will include the following measures to reduce potential visual impacts from new man-made facilities in the viewshed:

- BLM-acceptable exterior color on Project buildings as appropriate; and
- Fencing constructed of non-reflective materials.

Profile of Facilities

The Project will use low profile PV panel structures that do not extend higher than approximately 13 feet above the ground surface and Project facilities will be set back more than one mile from I-10 and at least four miles from SR-78 to reduce effects of introducing dark PV panels into the landscape.

As discussed in Section 4.1.6, the impact analysis assumes that the APMs have been implemented, and these measures are therefore requirements for approval of the Project. The APMs are to be incorporated into the EICMPP/MMRCP, along with the agency-required mitigation measures.

4.19.3 Direct and Indirect Impacts

4.19.3.1 Alternative 1: Proposed Action

The Proposed Action would convert approximately 3,616 acres of naturally appearing desert plain, and 154 acres of former agricultural land, to an industrial facility characterized by complex geometric forms and lines and industrial surfaces that are dissimilar to the surrounding natural landscape character. Most of the developed area would be covered with solar PV panels. Solar PV employs glass panels that are designed to maximize absorption and minimize reflection to increase electricity production efficiency. To limit reflection, solar PV panels are constructed of dark, light-absorbing materials and covered with an anti-reflective coating. Solar panels reflect as little as 2 percent of the incoming sunlight depending on the angle of the sun and assuming use of anti-reflective coatings (FAA 2010). An example of a solar PV array is shown in Figure 2-3.

The DQSP solar field would occupy most of the disturbed area (2,652 acres, or 74.8 percent of the total disturbed area), whereas electrical substations and transmission facilities, an O&M building, and access roads would take up the rest of the disturbed area. Most of the facility, including the solar field, would be low-profile, and would not exceed 13 feet in height. Some of the ancillary facilities, located primarily on the southeast section of the solar field, would have greater heights. The proposed gen-tie line leading away from the main generation facility would be approximately 135 feet tall, depending on the location and local terrain, with final heights to be determined during detailed design. Approximate dimensions of proposed facilities are provided below:

Solar Field

- Solar field: Linear arrays of PV modules up to 13 feet above grade, at a maximum.
- Security fence: Chain-link or wire fence around the perimeter, 7 feet tall, and upper 1 foot may be barbed wire.
- An estimated nine anemometer towers would be installed around the site perimeter. The anemometer towers would range from approximately 20 to 30 feet high.

Operations and Maintenance Area

- Operations and Maintenance (O&M) Building: The building would rest on a cement foundation, and would be approximately 120 feet by 50 feet in size.
- Lighting: During construction, portable light towers and plants may be used if necessary; otherwise lighting would consist of limited lighting installed around the construction office trailers. During operations, lighting would be placed at the O&M Building, On-Site Substation, and site entrance. Some portable lighting may also be required for maintenance activities that must be performed at night.
- Water Treatment: A septic system and leach field located at the O&M Building would serve as the sanitary waste system for Project operations.
- Water Storage: An above-ground water/firewater tank would be located at the O&M building, and would be used for drinking water and sanitary purposes.

Power Structures

- The On-Site Substation facility would occupy approximately 2.6 acres in the northwest portion of the Project site.
- Hard-wired fiber-optic cable would be installed underground to connect the site to existing communications cables, located approximately one mile to the north.
- Gen-Tie Line: Heights of structures would vary depending on the electrical clearances required, but would be lower than 135 feet in all cases.
- Distribution Line: The overhead lines would be carried on wood or color-treated steel poles with a maximum height of 70 feet.
- Power to support Project construction would be supplied by generators. Power to support operations would be provided by backfeed power through the On-Site Substation, with long-term backup provided by a temporary diesel generator.

Lighting requirements are discussed in detail in Chapter 2. During construction, security lighting would be needed at the construction staging areas, parking area, construction office trailer entries, site access points, and the security guard booth. Limited lighting would be installed around the construction office trailers. If needed for security, small lights with motion sensors may be installed on the outside of construction office trailers and/or portable light plants may be installed in a laydown yard or parking area. In addition, portable light towers may be used if, due to schedule or heat constraints, construction activities were to occur at night. During operation and maintenance, lighting would be placed at the O&M Building, On-Site Substation, and site

entrance. Some portable lighting may also be required for maintenance activities that must be performed at night. There would be no lighting along the Project perimeter. Lighting would be kept to a minimum and sensors and switches would be utilized to keep lighting off when not needed. All lights would be shielded and face downwards as much as possible.

The BLM's visual contrast rating system was used to analyze the visual impacts of the Project from eight KOPs. Figures 4.19-1 through 4.19-10 present both the existing and simulated conditions at each of the five KOPs for which simulations were created. The visual contrast ratings are summarized below in Table 4.19-3.

Table 4.19-3. Visual Contrast Rating Summary

ID	Name	Source of Contrast	Scale Dominance	Viewer Geometry	Duration of View	Overall Visual Contrast
KOP 1(a-h)	Interstate 10	Form; color; texture	Apparent	Oblique/ superior	Intermittent	Moderate
KOP 2	Chuckwalla Desert Tortoise ACEC	N/A	Not apparent	Variable	Intermittent	None-Weak[1]
KOP 3	McCoy Mountains	Form; color; texture	Dominant	Superior	Intermittent	Strong
KOP 4	Mule Mountains	Form; color; texture	Dominant	Superior	Intermittent	Strong
KOP 5	Bradshaw Trail	N/A	N/A	Variable	Intermittent	None
KOP 6	Nicholls Warm Springs/Mesa Verde	Form; line	Apparent	At-grade	Sustained	Moderate-Strong
KOP 7	Town of Ripley	Form; line	Not apparent	At-grade	Sustained	Weak
KOP 8	Colorado River	N/A	Not apparent	At-grade/ inferior	Intermittent	None

Source: URS 2016c.
Notes:
1 – Visual contrast may increase to a moderate-to-strong level depending on the vantage point within this resource.

Overall, the proposed solar field would cause the greatest visual contrast in the character element of form. From KOPs 1, 3, and 4, the Project would cause Moderate to Strong contrast in form, color and texture due to the density and movement of construction equipment and activities as well as smooth-textured and distinct tan color of graded areas, which would provide moderate contrast against the natural setting of the Chuckwalla Valley and the Palo Verde Mesa. For KOPs 6 and 7, the main source of contrast would be form and line. At KOP 6, the close proximity (less than one mile) of construction activities would provide moderate contrast, as well as the large scale of the Project and the smooth flat solar panels against the coarser texture of the background. At KOP 7, the collector poles would be visible though they would provide low visual contrast as they would be similar in line and form to other transmission and distribution pole structures in the area.

At KOPs 2, 5, and 8, the Project would result in None to Weak contrast due to low visibility of the Project from these locations due to topographic screening, presence of other transmission line facilities in the area, and distance of these KOPs from the Project.

As shown in the Table 4.19-3, overall visual contrast for KOPs 1, 2, 5, 7, and 8 is Moderate or less, which meets the visual resource management objective for VRM Class III areas. However, for KOPs 3, 4, and 6 the overall visual contrast is moderate-strong or strong, which does not meet the VRM Class III objective of a moderate level of change to the characteristic landscape. The visual contrast at these KOPs (and KOP 1) is due to their elevation above the Project site and/or close proximity to the Project site. A strong visual contrast would be reflective of the VRM Class IV objective.

The visual contrast provided by the Project could also affect scenic quality in the six SQRUs that the Project is located within or adjacent to. The scenic quality factor of "Cultural Modification" could be reduced due to the visual contrast of the Project with the existing landscape. The factor of "Adjacent Scenery" could also be affected if the land use objectives associated with surrounding SQRUs were reliant on the scenic quality of SQRU 021 where the Project site is located.

In SQRU 021 (Chuckwalla Valley), the Project's solar arrays, the most dominant visual element of the Project, would contrast with the existing natural character of the SQRU, thereby increasing the "Cultural Modification" of the SQRU (via a decreasing score), and therefore reducing the overall scenic quality rating of the SQRU from B to C.

As shown in Table 4.19-4, three of the five adjacent SQRUs would not be expected to undergo a change in scenic quality rating due to the Project. In SQRU 026 (McCoy Mountains), the Project would likely not be visible from the majority of the SQRU and the Project is not expected to detract from existing adjacent scenery in the adjacent National Park or Wilderness area. In SQRU 037 (Palo Verde), the Project could appear as a dominant element in the adjacent scenery and therefore reduce the value of the "Adjacent Scenery" factor, but not to an extent that a change in scenic quality would result. In SQRU 039 (Little Chuckwalla Mountains), though the Project may be visible from a part of the SQRU, the adjacent scenery is dominated by the nearby mountain ranges and would not be dominated by the Project, thus no change in scenic quality would result.

However, as noted in Table 4.19-4, there are two SQRUs that would be expected to decrease in scenic quality due to the Project. In SQRU 036, though the Project would not be visible from most of the SQRU, "Adjacent Scenery" may be reduced due to the modification of the Chuckwalla Valley from the Project's contrast with the natural characteristics of the valley. A one point reduction in "Adjacent Scenery" would reduce the existing rating from B to C. In SQRU 038, the Project could appear as a dominant element of the "Adjacent Scenery" that would be in contrast to the natural setting of the Chuckwalla Valley, thereby reducing the "Adjacent Scenery" score. A one point reduction in "Adjacent Scenery" would reduce the existing rating of SQRU 038 from B to C.

Table 4.19-4. Scenic Quality Rating Unit Impact Summary

Scenic Quality Rating Unit (SQRU)[1]	SQRU Name[1]	Existing Rating[2]	Expected Post-Project Rating	Rationale[1]
021	Chuckwalla Valley	B	C	Reduction in "Cultural Modification" from 0 to -4.

Table 4.19-4. Scenic Quality Rating Unit Impact Summary

Scenic Quality Rating Unit (SQRU)[1]	SQRU Name[1]	Existing Rating[2]	Expected Post-Project Rating	Rationale[1]
026	McCoy Mountains	C	C	Operation of the Project is not expected to detract from existing values for "Adjacent Scenery."
036	Blythe Valley	B	C	A reduction of one point in the value for "Adjacent Scenery" to account for modification to the Chuckwalla Valley.
037	Palo Verde	C	C	Despite the reduction of 1 point for "Adjacent Scenery" value, no change in overall classification would occur.
038	Mule Mountains	B	C	A reduction of 1 point in the value for "Adjacent Scenery" would decrease the overall scenic quality score from 12.5 to 11.5.
039	Little Chuckwalla Valley	B	B	"Adjacent Scenery" is dominated by the rugged topography of the Mule, McCoy and Little Chuckwalla Mountains; consequently, no change in the inventoried value for "Adjacent Scenery" is expected.

Source: URS 2016c
Notes:
1. Source: BLM 2010
2. Refer to Section 3.19 for a description of the ratings.

In terms of visual sensitivity, the Project is located in SLRU 49 (Bradshaw Trail National Backcountry Byway SLRU). SLRU 49 received a score of high due to the importance of maintaining scenic quality for adjacent land uses, including ACECs and Wilderness areas. Under the Project, the sensitivity score would likely remain high, as recreationists would continue to use the area and would prefer that no further development occur.

Collectively, the strong visual contrast of the Project at several KOPs and reduction in scenic quality of three SQRUs could reduce the overall VRI score for the Project site and surrounding lands from a Class II to Class III or IV. Due to the visual contrast of the solar panels with the natural landscape of the Chuckwalla Valley, the Project would begin to attract attention and begin to dominate the characteristic landscape. Landscape character changes to the elements of form and texture would be primarily perceived from superior (higher elevation to the Project) locations; color and line element changes are expected to be weak.

In an effort to reduce contrast resulting from the Project, Mitigation Measure VIS-1 contains 10 design elements to reduce form, color, line and texture contrast. Design elements include minimizing ground clearing; color treatment of cut slopes; feathering vegetation openings; color-treating panel backs; using low to no reflective materials, coatings or paints; consistency in building colors; use of nonspecular conductors and nonreflective coatings on insulators, color choice options, and preparing a lighting plan.

These design elements would assist in reducing contrast created by the Project, however, Mitigation Measure VIS-1 would not be sufficient to substantially reduce the contrast rating of the KOPs because the color and texture of the Project's solar panels and the large scale of the

Project would continue to create contrast during Project operations. During Project construction, large cleared areas and construction activities would also continue to create visual contrast.

With mitigation, and accounting for viewer specific conditions (such as view duration, viewer expectations, visual contrast, and view exposure), the DQSP would have moderate adverse impacts on visual resources due to moderate to strong visual contrast and impacts experienced within the foreground/middleground zone. Impacts in the foreground/middleground would be experienced by viewers with prolonged views (residences – KOP 6); however, most viewers (likely from higher elevations – KOPs 3 and 4) that would experience impacts would be transient (dispersed recreationists). Visual resource impacts would not be experienced from sensitive viewer locations within the Project's viewshed, including the Chuckwalla Desert Tortoise ACEC, Bradshaw Trail, Town of Ripley, and the Colorado River.

The following analysis discusses the visual effects of the three phases of the DQSP that have not been otherwise addressed above, as well as additional mitigation measures proposed to reduce visual contrasts.

Construction

During the construction period, earth-moving activities and construction materials, equipment, and workers, all could be visible on the site and along the gen-tie line ROW. Construction would occur over 25 to 48 months, during which a number of activities would take place, including large-scale vegetation removal, earthwork, as well as foundation and equipment installation. However, the overall degree of visual impact would be somewhat lessened because the area covered by any one phase of construction would be smaller compared to full build-out of the DQSP, and the visual effects would be temporary.

During construction, visual contrast would occur due to density and movement of construction equipment and workers, as well as construction activities such as site preparation and grading, installation of facilities, and building construction. Graded areas would contrast the natural setting of the Project site due to changes in color and texture resulting from the flat, smooth texture and distinct tan color of areas where natural vegetation was removed. Cleared areas would be shielded by surrounding vegetation for at-grade viewers, though installation of powerline poles would be visible due to the vertical nature of these facilities. Cleared areas would be more noticeable to viewers at higher elevations than the Project site. In general, construction-related activities would appear dominant for KOPs 4 and 6 due to the close proximity of viewers at these KOPs to the Project site.

Although the construction period is estimated to occur for 25 to 48 months, construction would not occur in any one place for the entire period. Further, construction activities would be conducted in a manner that minimizes dust emissions, including visible dust, as described in APMs for air quality. These measures would include watering of unpaved travel surfaces and limiting travel speed on these surfaces to 15 miles per hour. If nighttime construction activities were required, lighting would be provided that meets state and Federal worker safety regulations.

To the extent possible, the nighttime construction lighting would be shielded and directed downward, as described in Chapter 2. Task-specific lighting would be used to the extent practical while complying with worker safety regulations. Construction boundaries would be clearly delineated and surface disturbance minimized under Mitigation Measure VIS-2. Earthwork and vegetation manipulation strategies in Mitigation Measure VIS-1 and VIS-2 would assist in toning

down the contrast created in earth-moving and vegetation clearing. Adverse visual effects associated with generation of airborne dust as well as nighttime lighting during construction activities at the Project would be reduced with the implementation of Mitigation Measures AQ-1, AQ-2, VIS-1, and VIS-2.

Operation and Maintenance

The primary feature of the Project that would result in visual contrast is the solar panels. There are other transmission lines in the area, and thus the gen-tie line and distribution lines and poles would be less noticeable.

The Project would have no visual contrast at KOPs 8 and 5. The Project would have weak visual contrast at KOPs 1, 2, and 7 due to low visibility and screening from topography. At KOP 1, there is an estimated 4 mile segment of I-10, where the elevation of I-10 is higher than the Project site, in which the Project would be temporarily visible to east or west-bound travelers. The Project would have intermittent viewer exposure and weak visual contrast due to the low stature of the solar panels and subdominant appearance of the Project compared to the surrounding landscape.

The Project would have strong visual contrast at KOPs 3 and 4 and moderate visual contrast at KOP 6. At all three KOPs, the broad, flat form and dark color of the solar panels would provide form, color and texture contrast with the existing muted-tone landscape. In addition, the large scale of the facility relative to surrounding natural landscape would provide visual contrast such that the Project would dominate the landscape at KOPs 3 and 4. The gen-tie line would have a weak visual contrast at KOPs 3, 4, and 6 due to existing transmission line structures in the area. The collector poles would have a weak-moderate contrast at KOP 4 and weak contrast at KOPs 3 and 6 due to similar facilities in the area.

During the operation of the Project, visual effects would be caused by the visible elements of the DQSP, as described above. The discussion below focuses on the visual effects that are not captured by visual simulations (nighttime lighting and reflected sunlight/glare), or that are unique to the operation and maintenance phase. Mitigation Measure VIS-3 would be required to ensure that visual design measures are maintained properly over time, because some visual design measures can degrade over time and some may require monitoring and maintenance.

Operational Lighting

During operation and maintenance, lighting would be placed at the O&M Building, On-Site Substation, and site entrance. Some portable lighting may also be required for maintenance activities that must be performed at night. There would be no lighting along the Project perimeter.

The Draft Lighting Management Plan prepared by the Applicant describes the lighting to be used during operation of the Project and lighting best practices to be used by the Project. Implementation of the measures included in the Draft Lighting Management Plan would reduce potential nighttime lighting impacts for residents in Nicholls Warm Springs/Mesa Verde, motorists along I-10 and other nearby roads, as well as dispersed recreationists on adjacent BLM lands. While the measures in the Draft Lighting Management Plan would not totally eliminate the light visible by surrounding user groups, facility lighting would be minimized and controlled such that it would not be a nuisance and would not detract from the ability for affected viewers to

enjoy their surroundings or view the night sky. Existing light sources described in Section 3.19, *Visual Resources*, such as the motor vehicles traveling on surrounding roadways and from residences in Mesa Verde/Nicholls Warm Springs, would remain the primary sources of light within the Project area.

Glint and Glare

Adverse visual impacts and the potential for air traffic hazards from glint and glare effects is an issue of public concern regarding the installation of solar arrays, including PV modules. Glint (specular reflection) is produced from the reflection of the sun on a reflective surface. Glint is a potential source of viewer distraction from the strong contrasts and intense reflected light from reflective surfaces. Glare is a reflection of the bright sky that is less intense than glint, and is a continuous source of brightness during daylight hours.

Unlike large fields of parabolic mirrors, which have been known to produce fairly intense glint and glare at various times of the day, the use of PV technology is generally regarded as causing minimal glint and glare impacts. Solar PV employs glass panels that are designed to minimize reflection and reflect as little as 2 percent of the incoming sunlight (FAA 2010). Nevertheless, some glare is possible from the surface of the PV panels and other DQSP components (especially metallic components) that reflect light depending on panel orientation, sun angle, viewing angle, viewing distance, and other factors. For example, Sullivan et al. (2010 as cited in DOI 2010) observed glare from a slightly elevated viewpoint at a distance of approximately 2 miles from panels and ancillary components at a partially built PV facility in Nevada. Even though the panels to be used would be a uniform black color, from certain angles and times of day, the panels may appear grey or silvery white due to glare (Sullivan et al., 2010 as cited in DOI 2010). There is very little potential for glint and glare from the proposed PV modules because of the dark color and low reflectivity of the PV panels.

Potentially affected observers of glare from the Project would be travelers on I-10, users of nearby OHV routes, and visitors to the McCoy or Mule Mountains. It is possible that minor glare could be produced from back reflected light or light not absorbed by DQSP facilities. This glare could occur in any one place for several hours (e.g., a sunny afternoon), but is unlikely to be visually distracting or nuisance causing, though the glare produced by the DQSP could be more intense than any other natural or cultural features in an observer's perspective. The color contrast of the dark grey solar panels of the Project and the surrounding desert colors could be increased by glare produced from diffuse reflections of the DQSP, but would not be sufficiently intense or distracting as to alter any of the contrast ratings in Table 4.19-3.

Several measures are available that would reduce the potential for and frequency of glare from the solar fields. Under Mitigation Measure VIS-1, nonspecular conductors and nonreflective coatings on insulators would be required for the gen-tie line and low to no reflective materials, coatings or paints would be used when possible. Further, Mitigation Measure VIS-3 would ensure that painted and color-treated surfaces are maintained during operation and maintenance so as to prevent degradation of paint and colored-treated surfaces. The extent of reflective surfaces within the solar field and gen-tie line would be reduced by these mitigation measures; however, spread reflections off the face of the solar panels would not be prevented. Therefore, the color contrast of the solar panels during certain times of the day when the viewer is positioned in line with the sun would momentarily increase, but not to such an extent as to result in a change in the severity of the contrast rating in Table 4.19-3.

There would be no impact to DoD air navigation associated with Yuma Proving Ground. Appendix E of the DRECP (BLM 2016) states that "photovoltaic systems on or near SUAs [Special Use Airspace] or MTRs [Military Training Routes] present little to no conflict to military operations, testing, or training."

Decommissioning

The decommissioning of the Project would be similar to the construction activities described earlier, though the duration of decommissioning would be shorter than the duration of construction. Decommissioning would include demolition and removal of above-ground and subsurface facilities and site contouring and restoration. After removal of the facilities, a strong color contrast would be evident between graded, disturbed areas devoid of vegetation and undisturbed natural areas in the Project vicinity. Due to difficult growing conditions and the length of time needed for revegetation to mature in the desert, the visual contrast related to land disturbance would remain for quite some time. Implementation of mitigation measures VIS-1 and VIS-4 would aid greatly in reducing the visual effects of decommissioning. VIS-4 would require the Decommissioning and Site Reclamation Plan to include reclamation of the area of disturbed soils used for laydown, Project construction, and siting of the other ancillary operation and support structures. Further, VIS-4 would reduce the amount of disturbed area and blend the disturbed areas into the characteristic landscape. It would require replacement of soil, brush, rocks, and natural debris over disturbed areas. Newly introduce plant species would be of a form, color, and texture that blends with the landscape. These measures would ensure the visual impacts of decommissioning are minor and short-term.

Impacts to Special Designations

Due to the distance between the Project and nearby wilderness areas, it is unlikely that the Project would be visible from the adjacent wilderness areas, and there is no anticipated visual resource impact to these areas. As stated above, visual resource impacts would not be experienced from the Chuckwalla Desert Tortoise ACEC (KOP 2). However, due to discordance between the Project and the natural landscape of the Chuckwalla Valley, the overall scenic quality rating would decrease from B to C for the Chuckwalla Valley SQRU (21), where the Chuckwalla ACEC is located. Impacts to the Mule Mountains ACEC are described above in reference to KOP 4. There would be a strong visual contrast when viewing the Project from KOP 4 during construction and operation of the Project. The Mule Mountains ACEC is located in SQRUs 037 and 038. The scenic quality classification of C would remain for SQRU 037, though the rating for SQRU 038 would be lowered from B to C.

4.19.3.2 Alternative 2: Resource Avoidance Alternative

The direct and indirect impacts of the Resource Avoidance Alternative are similar or the same as the impacts of the Proposed Action, although the size of the facility would be reduced, with no solar panels located in the northwestern corner of the Project site. The degree to which the visible extent of the DQSP under Alternative 2 would be reduced would depend on viewing relationships. A reduction in the disturbance area of Alternative 2, particularly in the northwestern corner of the site, may result in reduction in visibility of the Project from a portion of I-10 (KOP 1a-h) and KOP 6 (Nicholls Warm Springs/Mesa Verde) due to the at-grade view

from these KOPs. The reduction in disturbance area of Alternative 2 may also result in a slight reduction in the scale of the Project when viewed from KOP 3 (McCoy Mountains). However, the slight changes in visibility would not change the visual contrast ratings presented in Table 4.19-3 for KOPs 1, 3, or 6.

Because the location of the gen-tie line would not change, all views of the gen-tie line would be identical to those of the Proposed Action. In addition, because the size of the O&M area and the need for security lighting would remain the same under Alternative 2, impacts related to light and glare would be the same or similar compared to the Proposed Action. All mitigation measures identified for the Proposed Action would be applicable to Alternative 2 and would result in a similar degree of reduction in the apparent visual contrast caused by Alternative 2.

Construction

Construction of Alternative 2 would be similar to the Proposed Action and, therefore, visual impacts from Project construction equipment, workers, site grading, vegetation removal, and lighting would be the same as those described for the Proposed Action. Due to the slightly smaller footprint of the Project, the geographic extent of these impacts would be smaller.

Operation and Maintenance

Alternative 2 operation and maintenance impacts would be essentially the same as Alternative 1. No visual simulations were created for Alternative 2. However, the appearance of the solar facilities under Alternative 2 would be similar to the visual simulations for Alternative 1. As discussed above, compared to Alternative 1, Alternative 2 may be less visible from a portion of I-10 (KOP 1a-h) and KOP 6 (Nicholls Warm Springs/Mesa Verde) due to the at-grade view from these KOPs and the absence of solar panels in the northwestern corner of the site. The scale of the Project when viewed from KOP 3 (McCoy Mountains) may also be slightly smaller for Alternative 2. However, the slight changes in visibility would not change the visual contrast ratings presented in Table 4.19-3 for KOPs 1, 3, or 6.

Decommissioning

Visual impacts from decommissioning of Alternative 2 would be the same as those described for the Proposed Action, though due to a slightly smaller footprint, the geographic extent of these impacts would be smaller.

4.19.3.3 Alternative 3: Reduced Project Alternative

The direct and indirect impacts of the Reduced Project Alternative are similar or the same as the impacts of the Proposed Action, although the size of the facility would be reduced with no solar panels located in the northwestern corner of the Project site (similar to Alternative 2) and a reduced number of panels along the eastern side of the site. A reduction in the disturbance area of Alternative 3, in both the northwestern corner and eastern side of the site, may result in an even greater reduction in visibility of the Project from a portion of I-10 (KOP 1a-h) and KOP 6 (Nicholls Warm Springs/Mesa Verde) due to the at-grade view from these KOPs, as compared to Alternative 2. The reduction in disturbance area of Alternative 3 may also result in a greater reduction in the scale of the Project when viewed from KOP 3 (McCoy Mountains) though the

solar facilities would still dominate the view from this KOP. In addition, Alternative 3 may be even less visible from KOP 7 (Town of Ripley) due to the absence of panels along the eastern edge of the site, thus increasing the distance between the KOP and the first visible panels for this at-grade view. However, the changes in visibility would not change the visual contrast ratings presented in Table 4.19-3 for KOPs 1, 3, 6, or 7.

Because the location of the gen-tie line would not change, all views of the gen-tie line would be identical to those of the Proposed Action. In addition, because the size of the O&M area and the need for security lighting would remain the same under Alternative 3, impacts related to light and glare would be the same or similar compared to the Proposed Action. All mitigation measures identified for the Proposed Action would apply to Alternative 3 and would result in a similar degree of reduction in the apparent visual contrast caused by Alternative 3.

Construction

Construction of Alternative 3 would be similar to the Proposed Action and, therefore, visual impacts from Project construction equipment, workers, grading, vegetation removal, and lighting would be the same as those described for the Proposed Action. Due to the smaller footprint of the Project and shorter construction schedule, the geographic extent and duration of these impacts would be smaller.

Operation and Maintenance

Alternative 3 operation and maintenance impacts would be essentially the same as Alternative 1. No visual simulations were created for Alternative 3. However, the appearance of the solar facilities under Alternative 3 would be similar to the visual simulations for Alternative 1. As discussed above, compared to Alternative 1, Alternative 3 may be less visible from a portion of I-10 (KOP 1a-h), KOP 6 (Nicholls Warm Springs/Mesa Verde), and KOP 7 (Town of Ripley) due to the at-grade view from these KOPs and the absence of solar panels in the northwestern corner and along the eastern edge of the site, which thus both reduces the width of the Project when viewed from these KOPs and/or increases the viewing distance from the KOP to the first visible panel. The scale of the Project when viewed from KOP 3 (McCoy Mountains) may also be smaller for Alternative 3, though the Project would still dominate the view from this location. However, the changes in visibility would not change the visual contrast ratings presented in Table 4.19-3 for KOPs 1, 3, 6, or 7.

Decommissioning

Visual impacts from decommissioning of Alternative 3 would be the same as those described for the Proposed Action, though due to a smaller footprint, the geographic extent of these impacts would be smaller.

4.19.4 Application of CEQA Significance Thresholds

VIS-1) Would the Project have a substantial adverse effect on a scenic vista?

Alternatives 1, 2, or 3 would not be located in a designated scenic vista. Neither the Riverside County General Plan (Riverside County 2015a) nor the Palo Verde Valley Area Plan (Riverside

County 2015b) designates the Project site as an important visual resource. Therefore, no impacts would occur.

VIS-2) Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Though Riverside County has identified I-10 as eligible for designation as a scenic corridor, it is not a state- or County-designated scenic highway. I-10 was included as KOP 1 (a-h) in the visual resources impact assessment. Alternatives 1, 2, or 3 would be consistent with visual policies contained in the Riverside County General Plan (Riverside County 2015a), Palo Verde Valley Area Plan (Riverside County 2015a), and the City of Blythe General Plan 2025 (2007). Policies to protect the scenic quality of views from designated and eligible scenic highways are contained in the County's General Plan and the Palo Verde Valley Area Plan. Distribution lines and the gen-tie line would be placed above-ground and would be within view of I-10, an eligible scenic highway, though the distance of I-10 to the Project and presence of other electrical transmission poles would lessen the visual impact of the Projects transmission lines. However, because the transmission lines for Alternatives 1, 2, or 3 would be above ground and at least partially visible from I-10, the distribution and gen-tie lines would not be consistent with the Riverside County General Plan LU Policy 14.5 requiring new electric distribution lines, which would be visible from designated or eligible state and County Scenic Highways, to be placed underground.

Motorists on I-10 enjoy scenic desert views across the Palo Verde Mesa to the mountains. Due to its low profile, the Project would not block motorists' views of the mountains, which would remain visible in the distance beyond the Project. It is estimated that the Project would be visible for a 4-mile segment of I-10 located north of the Project due to the elevation of I-10 above the Project in this section. Given the adjacent land uses, which include other solar facilities, the other transmission lines in the area and the distance between I-10 and the Project, Alternatives 1, 2, or 3 would be compatible with policies to protect scenic views from I-10. There are no scenic resources such as significant trees, rocks, historic buildings, or prominent topographic features that would be degraded due to Alternatives 1, 2, or 3. Therefore, no substantial adverse effects to scenic resources would occur and impacts would be less than significant.

VIS-3) Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?

Alternatives 1, 2, or 3 would be visible from portions of the nearby mountains (Mule and McCoy Mountains - KOPs 3 and 4), the adjacent housing development (Nicholls Warm Springs/Mesa Verde KOP 6), and along a 4-mile stretch of I-10 (KOP 1a-h) due to an elevation above the Project site and/or close proximity to the Project site. The broad, flat form of the solar panels, along with the dark grey color of the panels would strongly contrast with the desert landscape surrounding the Project and would dominate the landscape from the mountain views due to the large scale of the project and would be apparent from the I-10 and nearby development views. During construction of Alternatives 1, 2, or 3, the density and movement of construction workers and vehicles, as well as the appearance of cleared/graded areas, would contrast with the surrounding desert landscape. Therefore, during both construction and operation, Alternatives 1, 2, or 3 would degrade the existing visual character of the site and surrounding areas, particularly from elevated positions where the Project would be visible.

Alternatives 1, 2, or 3 (both during construction and operation) would be discordant with the existing naturally appearing visual character of the Chuckwalla Valley and would reduce the scenic quality of the Project area due to an increase in man-made development at the site. The overall scenic quality of the site would be reduced from a B to a C. Therefore, Alternatives 1, 2, or 3 would reduce the visual quality of the site, as well as the quality of surrounding areas that include views of the Project, particularly from nearby vantage points in the Mule and McCoy Mountains.

Though the existing visual character of the Project site is already influenced by existing transmission lines and other energy projects, Alternatives 1, 2, or 3 would result in substantial degradation of the existing visual character and visual quality of the Project site when viewed from elevated locations. Mitigation Measures VIS-1, 2, 3 and 4 would reduce visual contrast of Alternatives 1, 2, or 3 during construction, operation and decommissioning; however, these measures would not fully mitigate the significant visual impact of the Project. Therefore, Alternatives 1, 2, or 3 would result in a significant and unavoidable impact.

VIS-4) Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Solar PV employs glass panels that are designed to minimize reflection and reflect as little as 2 percent of the incoming sunlight (FAA 2010). Nevertheless, some glare is possible from the surface of the PV panels and other DQSP components (especially metallic components) that reflect light depending on panel orientation, sun angle, viewing angle, viewing distance, and other factors. It is possible that minor glare could be produced from back reflected light or light not absorbed by DQSP facilities. This glare could occur in any one place for several hours (e.g., a sunny afternoon), but is unlikely to be visually distracting or nuisance causing, though the glare produced by the DQSP could be more intense than any other natural or cultural features in an observer's perspective. The color contrast of the dark grey solar panels of the Project and the surrounding desert colors could be increased by glare produced from diffuse reflections of the DQSP, but would not create substantial glare that would adversely affect day or nighttime views in the area.

During construction of Alternatives 1, 2, or 3, security lighting would be needed at the construction staging areas, parking area, construction office trailer entries, site access points, and the security guard booth. Limited lighting would be installed around the construction office trailers. If needed for security, small lights with motion sensors may be installed on the outside perimeter of construction office trailers and/or portable light plants may be installed in a laydown yard or parking area. In addition, portable light towers may be used if, due to schedule or heat constraints, construction activities were to occur at night. During operation and maintenance of Alternatives 1, 2, or 3, lighting would be placed at the O&M Building, On-Site Substation, and site entrance. Some portable lighting may also be required for maintenance activities that must be performed at night. There would be no lighting along the Project perimeter. Lighting would be kept to a minimum and sensors and switches would be utilized to keep lighting off when not needed. All lights would be shielded and face downwards as much as possible. Therefore, Alternatives 1, 2, or 3 would not create substantial light that would adversely affect day or nighttime views in the area. Overall, impacts related to light and glare from Alternatives 1, 2, or 3 are anticipated to be less than significant.

VIS-5) Would the Project result in the creation of an aesthetically offensive site open to public view?

The general public would primarily view Alternatives 1, 2, or 3 temporarily from a 4 mile stretch of I-10 where the Project would be visible due to the elevation of the highway above the Project. The Project would also be visible to viewers at elevated positions in the Mule and McCoy Mountains (KOPs 3 and 4), as well as viewers in the nearby development of Nicholls Warm Springs/Mesa Verde. The broad, flat form of the solar panels, along with the dark grey color of the panels would contrast with the desert landscape surrounding the Project and would be apparent or dominate the landscape from these views and would reduce the scenic quality of the Project area due to an increase in man-made development at the otherwise natural appearing site.

However, the experience of viewers at most of the locations where the Project would be visible would be intermittent. The Project area is also being subjected to an increased amount of similar development with additional solar projects and transmission lines anticipated for construction in the near future. Though Alternatives 1, 2, or 3 would change the visual character of the site, the Project area is already influenced by nearby energy projects (Modified BSPP, Blythe Substation, Blythe Energy Center, etc.) and will continue to be modified when new energy projects are built. Therefore, Alternatives 1, 2, or 3 would not alter the site in a manner that would create a substantially aesthetically offensive site open to public view. Thus, impacts would be less than significant.

VIS-6) Would the Project interfere with nighttime use of the Mt. Palomar Observatory, as protected through Riverside County Ordinance No. 655?

Alternatives 1, 2, and 3 are over 100 miles east of the Mt. Palomar Observatory, which greatly exceeds the distance from the Observatory's areas of sensitivity (Zone A at a 15-mile radius and Zone B at a 45-mile radius from the Observatory). Therefore, there would be no impacts to astronomical observation and research at the Mt. Palomar Observatory.

VIS-7) Would the Project expose residential property to unacceptable light levels?

Construction and operation of Alternatives 1, 2, or 3 would utilize minimal lighting. Additionally, the proposed Project facilities would be close to existing sources of light, such as the Blythe Energy Center, Blythe Substation, the NRG Blythe Solar PV Project, and the Blythe Airport. Therefore, residential property would not be exposed to unacceptable light levels, and impacts would be less than significant.

4.19.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.19 would be maintained. Existing land uses would continue uninterrupted, and there would be no impact on visual resources.

4.19.6 Cumulative Impacts

Impacts resulting from construction, operation, maintenance, and decommissioning of the DQSP could result in a cumulative effect on visual resources in combination with other past, present, or reasonably foreseeable future actions. The geographic scope of the cumulative effects analysis for visual resources consists of the viewshed of the I-10 corridor (where visual impacts could be synergistic), and locations from which a viewer could see the Proposed Action along with views of other projects (where visual impacts could be additive). Potential cumulative effects on visual resources could occur during the DQSP's proposed 25 to 48-month construction period (e.g., from cumulative construction disturbances), during the 30-year term of the authorizations and permits for the Proposed Action (e.g., project contrast with the landscape, glint and glare), or result from closure and decommissioning (e.g., until restoration efforts return the landscape to its original condition). Cumulative visual impacts could occur as long as the DQSP contributes to visual changes to the landscape that are visible or perceived by the public, either within the same viewpoints, or as a noticeable element in a cumulative viewing experience (i.e., an OHV travel route, a drive on I-10, or a local road).

Existing conditions within the area of cumulative effects analysis reflect a combination of the natural condition and the effects of past actions, and are described in Chapter 3. Direct and indirect effects of the DQSP are analyzed above. The cumulative analysis provided here considers implementation of the Project in combination with other past, present, and reasonably foreseeable future projects described in Tables 4.1-1 and 4.1-2. Among them, projects such as the Palen, Blythe Airport, Modified Blythe, Desert Harvest, RE Crimson, and BMSP solar power projects, as well as numerous solar projects proposed on lands under County jurisdiction, are expected to result in synergistic visual impacts for travelers along I-10, as well as additive visual impacts to dispersed recreation users on BLM lands on the Palo Verde Mesa and local roads.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

Due to the visual contrast of the solar panels with the natural landscape of the Chuckwalla Valley, the Project would begin to attract attention and begin to dominate the characteristic landscape. Landscape character changes to the elements of form and texture would be primarily perceived from superior (higher elevation to the Project) locations; color and line element changes are expected to be weak. The degree of visual contrast caused by the DQSP solar field, as experienced from the eight KOPs, ranged from "none" to "strong".

The cumulative scenario for visual resource impacts, especially the viewshed impacts of utility-scale solar energy projects, has been evaluated in detail in the Western Solar Plan issued in July 2012 (BLM and DOE 2012). The specific solar technologies and the precise locations of projects were not known, however, the Riverside East Solar Energy Zone (SEZ) provides a useful approximation of the likely cumulative visual impact to be expected should all projects listed in Section 4.1 be developed. The projects in the cumulative scenario located on and adjacent to the Palo Verde Mesa, as well as south of I-10 and west of Blythe, are generally coincident with the SEZs analyzed in the Western Solar Plan.

Because of the large size of the Riverside East SEZ, the area's topography, and the general lack of screening vegetation, the viewshed of the SEZ is enormous. Within 25 miles of the SEZ, utility scale solar energy projects theoretically could be visible within an area of more than

2,100,000 acres (DOI 2010). The viewshed includes large portions of the mountain ranges surrounding the Chuckwalla Valley and some neighboring valleys, including Ward and Rice Valleys, and the Pinto Basin. The affected lands that are common to both the DQSP and the Riverside East SEZ include I-10, but do not include sensitive visual resource areas such as Wilderness areas because the DQSP is not visible from the nearby wilderness areas. The DQSP's viewshed is wholly encompassed by the viewshed of the Riverside East SEZ.

The main conclusion reached in the visual analysis of the SEZ is that visually complex, man-made industrial landscapes would contrast greatly with the surrounding lands, which are generally naturally appearing. Large visual impacts on the SEZ and surrounding lands within the SEZ viewshed would be associated with solar energy development due to major modification of the character of the existing landscape. This conclusion indicates that the cumulative scenario would result in a visual impact that is inconsistent with the Interim VRM objectives that have been established in the DQSP area as described in Section 3.19.1.6 (VRM Class III). The analysis in the Western Solar Plan also indicates that the most effective mitigation measures would be proper facility siting and layout, and that other mitigation measures addressing facility color and/or edge contrasts, due mostly to the size and scale of the foreseeable developments, would have a limited ability to appreciably reduce visual impacts from highly exposed areas.

In summary, the large-scale, closely spaced nature of projects in the cumulative scenario, in addition to the fact that some technologies, such as that proposed for the Rio Mesa Solar Project, would construct solar power towers approximately 760 feet tall, results in a cumulative scenario that would have major adverse impacts on the visual values in the visual resources cumulative geographic scope (BrightSource 2011). Commonly employed visual mitigation measures, such as those proposed in this section, would slightly reduce the cumulative visual impacts, but not to such a degree as to avoid or substantially reduce the impacts to visual values of the region. The cumulative impact would be long-term, adverse and unavoidable. The following sections provide additional details on the type and severity of cumulative visual impacts that would be experienced from each of the KOPs, from I-10, and for dispersed recreation users.

Impacts on KOPs/Visual Contrast Ratings

In general, the addition of the cumulative projects to the views from KOPs 1 through 8 would affect some views more than others, depending on topography and location of the cumulative projects relative to the KOPs. For KOPs 5 (Bradshaw Trail) and 8 (Colorado River), where no contrast was identified for the DQSP, it is unlikely that the addition of the cumulative projects would increase the contrast substantially due to the topography and distance between the cumulative projects and these at-grade KOPs, making it difficult to see the cumulative projects from these KOPs. For KOPs 2 (Chuckwalla Desert Tortoise ACEC) and 7 (Town of Ripley), where weak contrast was identified for the DQSP, the change in contrast would vary. For KOP 7, the addition of the cumulative projects would be unlikely to change the contrast substantially due to the distance between the cumulative projects and the at-grade KOP. However, for KOP 2, contrast may change from weak to strong because the KOP could be adjacent to or within one to two new solar projects, the RE Crimson and Mule Mountain III projects. KOP 1a-h (I-10) is discussed below in the discussion of impacts to the I-10 corridor. The remaining KOPs, 3 (McCoy Mountains), 4 (Mule Mountains), and 6 (Nicholls Warm Springs/Mesa Verde), were found to have moderate-strong or strong contrast with the DQSP. With the addition of the cumulative projects, a strong contrast would likely remain for KOPs 3 and 4, and the contrast for

KOP 6 may increase to strong due to additional solar development adjacent to the DQSP. The estimated visual contrast created by the cumulative scenario from each of the KOPs discussed in Section 4.19.3.1 is shown in Table 4.19-5. In sum, the cumulative scenario would have adverse and unavoidable visual resource impacts for over half of the KOPs that could not be sufficiently mitigated with feasible mitigation measures.

Motorists on I-10

Visual changes as a result of other projects both east and west of the DQSP in the cumulative scenario, including the Blythe Airport, RE Crimson, Mule Mountain III, Blythe Energy Project II, and the BMSP, would be visible to travelers on I-10, who would also experience limited views of the DQSP for a four mile stretch of I-10. The combined effect of large-scale landscape alterations from these solar projects, which would be visible along the length of I-10, would substantially degrade the visual character and the general scenic appeal of the existing desert landscape.

Table 4.19-5. Estimated Visual Contrast of Cumulative Scenario

ID	Name	Visual Contrast of DQSP	Estimated Visual Contrast of the Cumulative Scenario	Contribution of the DQSP to the Cumulative Visual Contrast
1	Interstate 10 (a-h)	Moderate	**Strong**. The number and size of the solar projects along the I-10 corridor would provide strong contrast to the natural desert landscape of the corridor.	**Minor**. The DQSP would only be visible for a short distance on I-10 (4 miles). There would be several other projects, which would, in total, transform the I-10 corridor into an industrial energy production landscape from an open desert landscape.
2	Chuckwalla Desert Tortoise ACEC	None-Weak	**Strong**. The KOP would be located adjacent to or within two large solar developments, Mule Mountain III and RE Crimson.	**Minor**. There would be low visibility of the DQSP from this KOP; if built, the other solar projects would dominate the view from this KOP.
3	McCoy Mountains	Strong	**Strong**. With the addition of the cumulative projects, the view from this elevated KOP would become increasingly developed and discordant with the natural desert landscape.	**Major.** The DQSP would dominate the view from this KOP, though additional projects would increase the scale and width of the view of solar projects.
4	Mule Mountains	Strong	**Strong**. With the addition of the cumulative projects, the view from this elevated KOP would become increasingly developed and discordant with the natural desert landscape.	**Major.** The DQSP would dominate the view from this KOP, though additional projects would increase the scale and width of the view of solar projects.

Table 4.19-5. Estimated Visual Contrast of Cumulative Scenario

ID	Name	Visual Contrast of DQSP	Estimated Visual Contrast of the Cumulative Scenario	Contribution of the DQSP to the Cumulative Visual Contrast
5	Bradshaw Trail	None	**None.** Due to distance to the cumulative projects and intervening topography, the cumulative projects would likely not be visible from this KOP.	**None.**
6	Nicholls Warm Springs/Mesa Verde	Moderate-Strong	**Strong.** Due to additional solar development adjacent to DQSP that would likely be visible from the KOP, the contrast would increase to strong as the view became more dominated by solar development.	**Moderate-Major**. The DQSP would be the largest solar project visible from this KOP, though additional projects would increase the scale and width of the view of solar projects from this KOP.
7	Town of Ripley	Weak	**Weak.** It is unlikely that the cumulative projects would be readily visible from this KOP due to distance from the KOP to the cumulative projects.	**Minor.** Due to its location, the DQSP would be the closest Project to the KOP and therefore the most visible, though the Project is not apparent from the KOP.
8	Colorado River	None	**None.** Due to distance to the cumulative projects, they would not be visible from this KOP.	**N/A**

Numerous existing cultural modifications are visible from the I-10 corridor, including transmission lines, pipelines, 4-wheel drive tracks, and widely scattered facilities and structures; however, the general character is of an unimpaired, isolated desert landscape. The cumulative scenario includes many large-scale solar plants whose scale, potential glare, color, and pervasiveness would adversely impact the continued existence of the general character of the I-10 corridor. Though considered unlikely, if all the cumulative projects included in Section 4.1 were to be implemented, tens of thousands of acres within the I-10 corridor viewshed between Desert Center and Blythe (approximately 50 miles) would be converted from undeveloped desert to a more industrialized appearance, with solar projects blending together into large swaths of developed landscape.

However, in many cases, favorable topography would diminish the apparent scale of the projects from motorists' perspective. The cumulative projects are at the same or similar elevation as the highway, and thus are reduced in prominence due to their distance from the highway and low angle of view, as is the case for the DQSP. In many cases, the other projects in the cumulative scenario would blend in with the horizon line of the valley floor, and the rugged mountains would remain the dominant visual features in the landscape, although this is decreasingly the case further west toward Desert Center where I-10 is elevated relative to the proposed solar energy developments. Because the landscape is currently undeveloped and valued by visitors for its isolated and unspoiled condition, the addition of numerous new large-scale solar projects

would substantially degrade the scenic experience for east and westbound travelers along I-10, due to the projects' industrial character and visual contrast.

Mitigation measures are available that partially reduce the color contrast of some structures, or the line contrast of vegetation clearing; however, the mitigation measures only reduce the contrast of certain features of the projects at various distances. Due to the size, extent and geographic dispersal of renewable energy projects in the cumulative scenario along I-10, mitigation measures would be insufficient to substantially reduce the visual impacts of the cumulative scenario. Though considered unlikely, if all of the cumulative projects were constructed, travelers along I-10 between Desert Center and Blythe would have very few views of an undisturbed desert landscape. For these reasons, the cumulative scenario would have a moderate to major (depending on visual sensitivity and visual exposure factors) adverse impact on the I-10 corridor. Thus, the cumulative scenario would present a significant and unavoidable impact for travelers along I-10 that could not be feasibly mitigated.

Dispersed Recreation Users in Surrounding Mountains

The DQSP, in combination with other projects, would make the valleys surrounding the Mule and McCoy Mountains appear increasingly industrialized, and could substantially diminish the remote and isolated character of the landscape. While use levels in the mountains surrounding the DQSP are generally low, the remote and isolated character of the landscape is highly valued by its users.

Available mitigation measures could not feasibly reduce the scale and contrast created by development of the cumulative projects, especially from elevated viewpoints. Even with mitigation, visitors to the higher elevation locations in the region (the McCoy and Mule Mountains) would be exposed to large-scale renewable energy developments on valley floors from multiple locations and in several view directions, causing a substantial adverse impact on solitude and other backcountry values. Thus, the cumulative scenario presents a significant and unavoidable impact for dispersed recreation users in the surrounding, higher-elevation mountains.

Summary

The Project would not contribute to adverse cumulative effects on any scenic vistas (VIS-1) or on scenic resources within a State scenic highway (VIS-2), would not contribute to cumulative creation of an aesthetically offensive site open to public view (VIS-5), and would not contribute to interference with nighttime use of the Mt. Palomar Observatory (VIS-6).

The Project would result in substantial degradation of the existing visual character and visual quality of the Project site when viewed from elevated locations. Even with implementation of Mitigation Measures VIS-1, 2, 3 and 4, the incremental impact of the Project when added to other past, present, and reasonably foreseeable future projects would be cumulatively considerable.

The Project would not contribute to adverse cumulative effects related to substantial light or glare that would adversely affect day or nighttime views in the area (VIS-4) or contribute to unacceptable light levels (VIS-7).

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The cumulative impacts for Alternative 2 would be similar to those for Alternative 1, though the contribution of the DQSP to impacts from KOPs 1, 3 and 6 may be reduced due to the slightly narrower width of the Project and increased distance of the solar panels from these KOPs, thus slightly decreasing the visibility of the Project from these KOPs or reducing the scale of the solar Project when viewed from the KOPs. However, the changes in visibility would not change the visual contrast ratings presented in Table 4.19-5.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The cumulative impacts for Alternative 3 would be similar to those for Alternative 1, though the contribution of the DQSP to impacts from KOPs 1, 3 and 6 may be reduced due to the narrower width of the Project and increased distance of the solar panels from these KOPs, thus decreasing the visibility of the Project from these KOPs or reducing the scale of the solar Project when viewed from the KOPs. However, the changes in visibility would not change the visual contrast ratings presented in Table 4.19-5.

Alternative 4 – No Action

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project, and the DQSP would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations in the CDCA Plan, which could include a different solar project, or other development. Alternative 4 would not contribute to cumulative visual impacts.

4.19.7 Residual Impacts

The implementation of Mitigation Measures VIS-1 through VIS-4 would reduce, but not eliminate, adverse cumulative impacts to KOPs. These residual impacts of the Project and alternatives would be unavoidable.

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4.20 Water Resources

4.20.1 Methodology for Analysis

This analysis of potential impacts of the Proposed Action and Alternatives on water resources includes an evaluation of groundwater supply and recharge, water quality (both surface water and groundwater), potential for flood damage, stormwater flow, and springs.

4.20.1.1 CEQA Significance Criteria

The criteria listed below were used to determine if the Project would have significant impacts to water resources. These criteria are the same as the significance criteria listed in the CEQA Environmental Checklist, Appendix G of the state CEQA Guidelines. Under CEQA, the proposed Project and alternatives would have a significant impact on water resources and require mitigation if they would:

HYD-1) Violate any water quality standards or waste discharge regulations.

HYD-2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

HYD-3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

HYD-4) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

HYD-5) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

HYD-6) Otherwise substantially degrade water quality.

HYD-7) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

HYD-8) Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

HYD-9) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

HYD-10) Be at risk of inundation by seiche, tsunami, or mudflow.

The following additional significance criteria from the County of Riverside CEQA Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

HYD-11) Include new or retrofitted Stormwater Treatment Control BMPs (e.g., water quality treatment basins, constructed treatment wetlands), the operation of which could result in significant environmental effects (i.e., increased vectors and/or odors).

HYD-12) Cause changes in absorption rates or the rate and amount of surface runoff.

HYD-13) Cause changes in the amount of surface water in any water body.

4.20.2 Applicant-Proposed Measures

Section 4.9.2 describes APMs and management plans intended to address hazardous materials handling and disposal. Those measures would be protective of water quality, and would therefore be applicable to protection of water resources.

The Applicant has developed a preliminary summary of a SWPPP, which would be developed and implemented prior to Project construction. The SWPPP would define Best Management Practices (BMPs) to be used to minimize the potential for the Project to modify onsite stormwater flow and erosion characteristics. The SWPPP will include the following information:

1. Sequence of construction events and identification of potential pollutants on the Project site;
2. Calculation of the potential disturbance area;
3. Identification of streams and wetlands, in vicinity of Project;
4. Description of proposed storm water pollution control measures;
5. Summary of applicable regulatory requirements;
6. Inspection, monitoring, and maintenance procedures;
7. Site restoration measures; and
8. Minimum training and reporting requirements

The SWPPP will also contain site map(s) that show the construction site perimeter; existing and proposed structures and roadways; storm water collection and discharge points; and drainage patterns across the site both before and after construction.

The erosion and sediment control measures discussed in the SWPPP will serve as minimum standards during construction. The SWPPP will describe the physical erosion and sediment control measures that would be implemented, including filter fabric fence, palliatives, geotextiles, and straw bales. The SWPPP will define the locations of these measures, and potential alternatives and limitations for each measure. In general, the measures would address stormwater, sedimentation, and erosion impacts by:

- Minimizing the quantity and duration of soil exposure to stormflow;
- Protecting critical areas during construction by reducing the velocity of and redirecting runoff;
- Installing and maintaining erosion and sediment control measures during construction; and

- Inspecting the work area and maintaining erosion and sediment controls as necessary until final stabilization is achieved.

To achieve this, the following BMPs for initial site stabilization and construction entrance installation would be implemented:

- Project area boundaries (e.g. workspace limits) will be clearly delineated and the contractor will ensure that no stabilization structures are installed outside the Project extent;
- Grading plans would be developed to minimize the amount of vegetation to be removed;
- Filter fabric fence will be installed along Project borders that have the potential to release sediment into receiving waters or other environmentally sensitive areas;
- Storm drain protection barriers will be installed around any storm drain inlet, catch basin or culvert present within the Project area; and
- Stabilized construction entrance/exits to public right-of-ways will be installed.

Where feasible, stemmed vegetation such as brush, shrubs and trees shall be removed at or near the ground level, leaving the root systems intact to stabilize the soil. Preservation of existing vegetation is one of the most effective methods of erosion control and storm water management, and the contractor shall only remove the vegetation required to complete the Project. Temporary erosion control measures (such as sediment barriers) will be installed to contain disturbed soils within the work area during clearing and grading activities that have the potential to release upland soil sediment into adjacent water bodies or environmentally sensitive areas. All temporary soil stockpiles will be placed in upland areas and surrounded by filter-fabric fence.

Because Project water use is almost entirely associated with dust control during construction, the measures associated with the Applicant's Phased Site Preparation Plan would be used to conserve water where feasible. Although grading would be necessary in some parts of the site, the measures used to phase construction, control vehicle speed, cover stockpiles, minimize the amount of disturbed ground, and maintain existing vegetation, where feasible, would also result in minimizing water use. In addition, the use of soil stabilizers would minimize the need to use water to control dust in those areas.

As discussed in Section 4.1.6, the impact analysis assumes that the APMs have been implemented, and these measures are therefore requirements for approval of the Project. The APMs are to be incorporated into the EICMPP/MMRCP, along with the agency-required mitigation measures.

4.20.3 Direct and Indirect Impacts

4.20.3.1 Alternative 1: Proposed Action

Construction

Some impacts related to ground disturbance, such as those relating to surface water and drainage patterns and flood hazard areas, would begin during the construction phase and continue throughout the operation and maintenance phase, and are therefore described below under *Operation and Maintenance*. Where appropriate, a distinction is made between temporary

impacts, which would occur during construction only, and long-term impacts, which would occur during both phases.

Groundwater Supply and Recharge

The analysis of impacts to groundwater supply and recharge is based on modeling of the anticipated effect of Project-related groundwater withdrawal on the overall groundwater balance in the Palo Verde Groundwater Basin (PVGB), the effect of groundwater withdrawal on the PVID drains, and the effect of the withdrawal on nearby groundwater wells.

The PVGB is made up of two components: the Palo Verde Mesa Groundwater Basin (PVMGB), and the Palo Verde Valley Groundwater Basin (PVVGB). The PVVGB comprises the floodplain of the Colorado River. Although the solar projects, including the DQSP, are situated on the PVMGB, BLM has typically evaluated the PVGB as a whole, in order to ensure that project effects on the Colorado River are understood. Therefore, the analysis in this Draft PA/EIS/EIR evaluates the entire PVGB.

BLM has previously analyzed the effect of groundwater withdrawal for solar plant construction in the PVGB in their Environmental Impact Statements (EISs) for the BSPP (BLM 2010), the MSEP (BLM 2012b); and the Modified BSPP (BLM 2014). The analyses were based on a numerical groundwater flow model originally developed by the U.S. Geological Survey (USGS; Lieke 2008). The Applicant for the BSPP adapted the USGS model to support BLM's analysis of groundwater withdrawal impacts for that project (AECOM 2010). That analysis concluded that groundwater drawdown of 0.1 feet would be limited to the Palo Verde Mesa Groundwater Basin (PVMGB), and would not extend into the adjacent PVVGB or the Colorado River. The numerical model for the BSPP was then modified in 2011 to support BLM's analysis of the MSEP (AECOM 2011). To support that analysis, the Applicant for the MSEP reviewed and updated the input parameters for the numerical model, and modeled the drawdown associated with the different well locations associated with the MSEP. Again, the analysis concluded that groundwater use for the MSEP would result in drawdown of less than one foot at the nearest water supply wells, the radius of influence would not extend off of the Palo Verde Mesa, and it was unlikely that the MSEP would influence the PVID drains. For the Modified BSPP EIS, BLM used the modeling results from the BSPP, but updated their conclusions, stating that hydraulic connectivity between the PVMGB and PVVGB does not exist.

For the DQSP, the Applicant adapted the MSEP groundwater model, and customized it based on four potential locations of groundwater production wells within the Project boundaries URS 2016d, provided in Appendix X). The model was constructed as a single-layer (two-dimensional) numerical groundwater flow model in MODFLOW2000 (Groundwater Modeling System [GMS] platform). The geographic scope of the model included the entire Palo Verde Valley, including the mesa and floodplain. The base of the model was established at the bottom of the younger and older Colorado River alluvium, as these are the productive aquifers in the valley. A variety of boundary conditions were employed to simulate inflow and outflow of water from the model following the basin water balance. The Colorado River formed the eastern boundary of the model and was simulated using depth profiles provided by the U.S. Bureau of Reclamation (USBR) along selected locations of the river reach through the Palo Verde Valley. The river bottom elevation was linearly interpolated from these data for all river cells along the

eastern boundary of the model domain. The model was calibrated to steady-state conditions and average measured water levels from wells on both the mesa and floodplain from 1980 to 2009.

Groundwater withdrawals would occur during construction. A model was completed in order to evaluate the combined effects of pumping associated with construction and operation. Four well locations within the footprint of the Proposed Action were evaluated in the model as the pumping locations, including a well in the northeastern portion of the Project area (BLM North Well), a well on the private land parcel (Private Parcel Well), a well in the east-central portion of the Project area (BLM Central Well), and a well in the southern portion of the Project area (BLM South Well). None of these wells are currently in operation or in a usable condition, and there are no existing authorizations for them. However, they were selected because they represent locations that could feasibly be used for future wells, as they apparently served as water supply wells in the past.

The currently proposed locations of production wells are shown in Figure 2-2 for the Proposed Action, and in Figures 2-9 and 2-10 for the Resource Avoidance and Reduced Project Alternatives, respectively. The Northern Well is approximately in the same location as the production well proposed under the Resource Avoidance and Reduced Project Alternatives. Under the Proposed Action, the proposed production well would be located approximately 1.5 miles west of the Northern Well, and would be located much further from the other potentially affected wells on the mesa.

The groundwater pumping simulations were modeled for both a 25-month and 48-month construction scenarios. The 25-month construction scenario assumes water usage of 700 AFY for a total of 1,400 AF. The 48-month construction scenario assumes water usage of 450 AFY for a total of 1,800 AF.

Results from both construction scenarios indicated that the model-predicted drawdown outside of the solar field boundary would be less than 0.1 foot at the end of construction. Drawdown would primarily be constrained to the mesa area during construction. Additionally, under the 450 AFY construction scenario, the model predicts that the extent of drawdown is less than predicted for the construction scenario with the higher pumping rate (700 AFY) and shorter 25-month duration. Drawdowns less than 0.1 feet are negligible when considering the thickness of the aquifer and typical well installation in the region. Under both construction scenarios, the impacts from water use are negligible to offsite water wells.

In general, the results from the analysis of all four wells suggest that there are no potential well locations within the Project area that would result in unacceptable impacts to offsite wells. The results from the analysis of all four wells are similar to each other, showing approximately the same radius of influence limited to within approximately one mile of the well. Of the four wells, the Northern Well, under the 700 AFY scenario, is the most conservative scenario analyzed in the model because the location is on the Project area boundary, and is closest to other wells on the mesa northeast of the Project area, as identified in the USGS National Water Information System (NWIS) database. This is the only scenario in which drawdown exceeding 0.1 feet would occur outside of the Project area, and would potentially encompass another well location. Any other location within the Project area, including the location in the Proposed Action, potential temporary wells along the southeastern or southwestern Project boundary, would be further removed from the potentially affected wells on the mesa. As discussed in Section 2.3.3.8, further study, including groundwater well pump testing, would be performed to establish the

feasibility of obtaining the needed supplies from onsite wells, and the specific locations of onsite production wells. However, the result of the modeling of the four hypothetical well locations indicates that no onsite well location would result in unacceptable offsite impacts.

To ensure that the actual groundwater drawdown does not exceed the predicted drawdown, Mitigation Measure WATER-4 requires that the Applicant develop and implement a Groundwater Monitoring and Mitigation Plan prior to construction.

Surface Water Supplies

As discussed in Section 2.3.3.8, an off-site water supply may be used to supplement, or in place of, water from groundwater wells. This may include a situation where a temporary water source is needed before a water supply well can be installed, or could occur throughout the duration of construction. The source of this water would be the PVID, which obtains water from the Colorado River through Priority 1 and Priority 3 rights pursuant to a 1933 Water Delivery contract with the United States (URS 2016a, provided in Appendix Y).

PVID's Priority 3 water rights are not based on volume, but on the ability to irrigate 16,000 acres on the Palo Verde Mesa. As of 2000, approximately 2,500 acres on the mesa were receiving irrigation water from PVID. The majority of the Project site is located within the PVID service boundaries, and PVID has confirmed that PVID may supply water to areas within these boundaries for beneficial uses, which would include the Project. PVID has provided a letter, included as Appendix C of the WSA, indicating that they are capable and willing to supply the water for Project needs, and that their water supply and other customers would not be negatively impacted.

Water Quality

Construction of the DQSP would require the use of heavy machinery for vegetation grubbing, grading, and installation of roads, pipelines, generation facilities, transmission facilities, administration buildings, the solar field, and other facilities as discussed previously. Construction of these facilities would involve the use of bulldozers, graders, semi-trucks, and various other heavy machinery, and would involve changes to on-site topography. These activities would potentially loosen existing surface soils and sediments, increasing the potential for erosion during storm events. Additionally, the use of construction equipment may involve the accidental release of fuel, oils, brake dust, lubricants, antifreeze, and other potentially hazardous substances at the construction site. These water quality pollutants could become entrained in surface water during storm events, and/or be infiltrated into groundwater and the underlying aquifer, resulting in the degradation of water quality. Existing water quality would not be affected by extraction of groundwater during construction.

The Applicant will implement site design and protective erosion and drainage control design measures during construction to prevent the degradation of water quality. The Project will conform to the California State Water Resource Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges (General Permit) for activities regarding runoff and erosion control, as well as applicable regional, county, and local requirements. This will include preparing a SWPPP and implementing appropriate storm water BMP as described in Section 4.20.2 and required by Mitigation Measure WATER-1. BMPs will consist of control measures such as swales and ditches, stabilized construction entrances, gravel-covered construction staging area, and silt fencing. The industrial SWPPP (if

necessary) will include appropriate BMPs (such as secondary containment structures around mineral oil-filled transformers). Implementation of a SWPPP, would reduce the potential water quality degradation of stormwater emanating from the DQSP site.

Flood Hazards

The Project site is located in a desert environment within a large alluvial fan system with several washes that periodically collect runoff water during infrequent rain events. No perennial water bodies are located on the Project site itself. No Federal Emergency Management Agency-(FEMA-) designated flood zones exist within the vicinity of the Project; the Project Site Area and vicinity are classified by FEMA as Zone D, indicating an area where there are possible but undetermined flood hazards (FIRM map 06065C Panel 06065C3200G). In areas designated Zone D, no analysis of flood hazards has been conducted (URS 2011).

The Project site is located in an arid environment and on relatively high ground northeast of the Mule Mountains, which drain into and through portions of the site. Based on a site drainage report, the potential for flooding on the site is considered moderate (URS 2011). Although some surface water collects within the Project area, the Applicant is exploring site preparation methods that will contain water draining onto the site, and fill the primary low areas, if necessary, to avoid flooding hazard in limited portions of the site area. The Project area also contains washes that periodically contain water during infrequent events, and an agricultural ditch surrounding an offsite jojoba farm also periodically contains water.

In the event that a major storm event occurs during construction of the DQSP, unanticipated flooding could occur on site. Potential for damage to facilities due to on-site flooding would be exacerbated during the construction period. This is because a major flood event could occur at any time, including prior to the completion of the proposed stormwater management facilities on site. Therefore, unless construction practices and procedures are carefully managed, flooding during construction could result in damages to onsite facilities, interference with the construction process, and potential exposure of employees to flood conditions.

To minimize potential for construction period flooding to affect site facilities, the Project will conform to the SWRCB NPDES General Permit for Storm Water Discharges, as described in Section 4.20.2. Site design and implementation of protective erosion and drainage control design measures during construction will manage stormwater flow to mitigate downstream erosion and channelization. In addition, the Applicant would be required to implement Mitigation Measure WATER-3, which would ensure that proposed onsite buildings are protected from flooding, and that all onsite buildings and fill areas are placed outside of frequent flood flow areas.

Operation and Maintenance

Groundwater Supply and Recharge

The impact assessment for groundwater was performed based on the results of a numerical groundwater model (Palo Verde Groundwater Model) that was previously developed for the BSPP and MSEP, which are located adjacent to each other, north of the Project across Interstate 10. The model encompasses the entirety of the Palo Verde Valley inclusive of both the PVMGB and the PVVGB; these basins considered together are hereafter referred to as the PVGB. The Palo Verde Groundwater Model was modified to accommodate the location of the proposed

Project and its water supply wells. Model runs and associated documentation were completed by URS (2016d), in order to predict:

1. The effects from DQSP-only pumping during construction and operation, on groundwater supply wells on the Palo Verde Mesa, and how pumping might affect PVGB storage;
2. The cumulative effects of all proposed projects in the Palo Verde Valley on water levels and groundwater basin storage (results from this portion of the evaluation are considered under the subsequent discussion of cumulative impacts); and
3. To what extent the DQSP could cause a change in flux of surface water in PVID drains into underlying groundwater in the floodplain.

The Palo Verde Groundwater Model was constructed as a single-layer (two dimensional) numerical groundwater flow model in MODFLOW2000, with a domain that encompassed the entire Palo Verde Valley, inclusive of the mesa and floodplain. The base of the model was established at the bottom of the younger and older Colorado River alluvium, since these are the productive aquifers in the valley. A variety of boundary conditions were employed to simulate inflow and outflow of water from the model following the basin water balance. The Colorado River formed the eastern boundary of the model and was simulated using depth profiles provided by the USBR along selected locations of the river reach through the Palo Verde Valley. The river bottom elevation was linearly interpolated from these data for all river cells along the eastern boundary of the model domain.

In calibrating the Palo Verde Valley model, the hydraulic conductivity distribution was initially homogeneous and additional hydraulic conductivity zones were added as necessary to match the observed water levels and changes in hydraulic gradient in the floodplain and on the mesa. The model was calibrated to steady-state conditions and average measured water levels from wells on both the mesa and floodplain from 1980 to 2009.

No additional calibration was conducted for the numerical modeling for this Project. Steady-state conditions of calibrating the model to actual observed conditions of groundwater levels was deemed not necessary as few available additional data points of water levels were available in publically available records in the USGS NWIS database, and those few available water levels were measured close to water levels already included in the existing groundwater model.

Additionally, as part of the water balance calibration, the model also used the average measured discharge data from the PVID drains as a measure of model calibration, matching the average discharge data since 1993 reported by the USBR (USBR 2009). The model met calibration targets following generally accepted practices, and generally provided an adequate representation by comparison to the average water levels over the calibration period and flow directions and mixing along the mesa and floodplain boundary. Additional details regarding model design can be found in the Proposed Groundwater Use – Numerical Groundwater Modeling Report (URS 2016d).

Four model simulations were conducted where each of the four wells located on the site were individually modeled at the required pumping rates for providing the necessary rates of groundwater extraction during construction and operation. Groundwater pumping simulations were modeled for both a 25-month and 48-month construction scenarios followed by 30 years of operation. The 25-month construction scenario assumes water usage of 700 AFY during construction for a total of 1,400 AF, and 38 AFY during the operation period of 30 years for a

total of 1,140 AF. Total Project water usage of 2,540 AF would be pumped under the 25-month construction and 30 year operational scenario (32 years). Because the 30 year period of the ROW would include the construction, operations, and decommissioning phases, the assumption of a longer extraction period in the model is a conservative analysis of the impacts associated with groundwater withdrawal.

The 48-month construction scenario assumes water usage of 450 AFY during construction for a total of 1,800 AF, and 38 AFY during the operational period of 30 years for a total of 1,140 AF. Total Project water usage of 2,940 AF would be pumped under the 48-month construction and 30 year operational scenario (34 years). Again, this is a conservative analysis, by analyzing a longer duration for groundwater extraction.

The model results show that, regardless of the well configuration or associated pumping rates, the influence from DQSP pumping would be minimal. The model predicted that drawdown outside of the solar plant boundary would be less than 0.1 foot, both at the end of construction and at the end of operational pumping. As would be anticipated, the construction pumping produced a larger drawdown at the pumping well and correspondingly larger radius of influence. In general, the predicted cones of depression were similar among the scenarios.

Drawdown would primarily be constrained to the mesa area during operation. Predicted drawdowns at the end of operation for the Central Well and South Well show 0.01 feet of drawdown extending slightly into the PVVGB under the 700 AFY and 450 AFY scenarios. Additionally, under the 450 AFY construction scenario, the model predicts that the extent of drawdown is less than predicted for the construction scenario with the higher pumping rate (700 AFY) and shorter 25-month duration. Drawdowns less than 0.1 feet are negligible when considering the thickness of the aquifer and typical well installation in the region. Under both construction scenarios, the impacts from water use to off-site water wells are negligible.

The cumulative change in flow through the PVID drains was evaluated for the two varying construction pumping rate scenarios. Both scenarios show that there is a very small change in the PVID drain mass balance between the non-pumping and pumping condition at the end of construction and end of operation. For the 700 AFY construction scenario, there was a total change of about 476 AF at the end of the combined construction and operational period of 32 years. The total change represents 0.0037 percent or the 12.8 million AF of the throughput in the PVID drains over 32 years. For the 450 AFY construction scenario, there was total change of about 520 AF at the end of the combined construction and operational period of 34 years. The total change represents 0.0039 percent of the 13.5 million AF of the throughput in the PVID drains over 34 years.

It is important to note that this small of a change would be unmeasurable, and thus the model prediction cannot be verified. Further, it is also important to note that it is likely that this prediction is a function of the overall simplicity and limitations of the two-dimensional groundwater model and steady-state calibration, rather than a reflection of likely processes, given the very low proposed pumping volume. The change is very small in relationship to the overall PVID drain throughput in the model, and as such should be considered within the error of the model to reliably predict the change in mass flux from the drains. To ensure that the actual groundwater drawdown does not exceed the predicted drawdown, Mitigation Measure WATER-4 requires that the Applicant develop and implement a Groundwater Monitoring and Mitigation Plan prior to construction.

Installation of new impervious surfaces can in some cases result in reductions in ground surface infiltration capacity, potentially causing reductions in net groundwater recharge. As discussed in greater detail below (see subsequent discussion of stormwater flows), the approximate percentage of the Project site that will be covered with impervious surfaces (inverter foundations, etc.), will constitute a fraction of one percent of the total surface area of the Project site. Infiltration of stormwater would be prevented from occurring within these areas. The unmitigated post-Project sediment transport will be less than the pre-Project conditions due to soil compaction during construction. In general, the Project site experiences relatively shallow and slow flows, so the nominal increases in post-Project flow depths and velocities do not overcome the decreased erosion potential due to compaction. Compaction of soils during construction would reduce infiltration slightly; however, the sandy desert soils located on site have generally high infiltration capacity. Additionally, areas surrounding the DQSP site would not be affected, and would remain pervious. Therefore, the potential effects of the proposed impervious surfaces on site would be minimal in comparison to the overall infiltration capacity of the DQSP site and surrounding areas. Within the solar field, the proposed panels are not expected to interfere with stormwater infiltration: rainfall incident on the panels would fall to the ground, which would remain pervious, and be permitted to infiltrate.

The BLM recognizes disagreement among water resource professionals as to whether hydrologic connectivity exists between the Palo Verde Mesa Groundwater Basin (PVMGB), which underlies the Project site, and the Colorado River via the intervening Palo Verde Valley Groundwater Basin (PVVGB) (Godfrey et al. 2013). The PVMGB and PVVGB collectively are referred to as the Palo Verde Groundwater Basin (PVGB). The issue is whether or not Project-related groundwater use could induce flows from the Colorado River into the PVMGB. Any resulting use of Colorado River water without an entitlement could be considered to violate the Law of the River (Colorado River Compact of 1922 and amendments).

After thorough review and consideration of input received during the formal comment period on the MSEP Draft EIS, BLM concluded that the data does not demonstrate that connectivity exists. Agricultural development in the area has caused changes in the groundwater flow patterns in local aquifers (USGS 1988). Irrigation and its associated network of drainage ditches have a significant effect on the saturated thickness of the aquifers and on the direction of groundwater movement through the aquifers (USGS 1988). In the vicinity of the Project site, a boundary between the PVMGB and the PVVGB exists along the toe of the mesa in the form of Palo Verde Valley Irrigation District (PVID) drains. Water from the Colorado River, located over 6 miles east of the mesa, does not flow into the PVMGB due to PVID's drains that intercept all river water (in the form of sub-surface flow within the PVVGB) flowing west toward the PVMGB. Similarly, in the vicinity of the Project, groundwater within the PVMGB either flows east into a PVID drain along the toe of the mesa or into a cone of depression formed by a well. PVID drains prevent underflow from the PVVGB into the PVMGB from occurring and no water flows directly from the Colorado River past the network of PVID drains into the PVMGB. However, the fact that connectivity has not yet been demonstrated does not preclude the possibility that connectivity could be shown in the future.

Separate from the groundwater model, BLM reviewed the Colorado River Accounting Surface methodology proposed by the USGS (USGS 2009). A review of the Figure 6 in the USGS analysis shows that the Accounting Surface elevation in the vicinity of the Project is approximately 237 feet above sea level. From Figure 5 in the Groundwater Modeling Report

(URS 2016d), the groundwater elevation in the Project area is approximately 245 to 250 feet above sea level. Based on the maximum modeled drawdown of approximately one foot, it is unlikely that the Project would withdraw groundwater from below the Accounting Surface. Mitigation Measure WATER-4 provides details related to the required analysis, including development of specific groundwater elevation triggers, and specific actions to be taken if trigger elevations are reached, to reduce the possibility of impacts related to Colorado River water.

Surface Water and Drainage Patterns

The DQSP would be constructed in an area that presently is drained primarily by sheet flow and desert washes. Low-frequency, high-intensity monsoonal storms in the region can result in high volumes of stormwater flow within the vicinity of the DQSP site, which can cause high volumes of surface runoff to occur in the vicinity of the Project area. Although on-site grading would be minimized, and major features of existing onsite drainages would be preserved, the installation of proposed facilities, including roads, fencing, and solar arrays, could interfere with existing drainage patterns onsite. These changes could result in altered hydrology on site or downstream, thereby causing increases in erosion and sedimentation.

In general, surface water drains onto the Project site from the surrounding mountains to the north and west, then towards the Colorado River to the east. There are no perennial streams on the Project site or the Palo Verde Mesa. The Project area consists of two distinct types of topography which affect site drainage. Approximately half of the northwestern portion of the Project site is part of an alluvial fan which slopes in a southeastward direction from the McCoy Mountains, located to the northwest. The southeastern portion of the site is a flat plateau, part of the Palo Verde Mesa. The ground surface in this area is characterized by a series of depressions in which surface water can pool.

The Project would cause minor impacts to the existing drainage shed area. During construction, the Project would alter the soil's hydraulic characteristics within the solar arrays due to vegetation removal and grading. Vegetation would be disked under, mulched or composted and retained onsite to assist in erosion control and limit waste disposal. Grading activities would consist of micrograding within sections of the solar array fields; however, the macro-level topography would remain unchanged.

A drainage study conducted for the Project shows that impacts to onsite drainage systems will be minimized due to the relatively flat terrain and presence of large natural depressions that range from one to five feet deep (TLA 2011). These large depressions store significant volumes of water which would attenuate the increased runoff. After construction, increases in flow depth, velocity and outflow would be mitigated with onsite retention basins sized with at least 20 AF of combined storm water storage capacity. In addition, sediment transport would be less than the pre-Project conditions due to soil compaction during construction.

The unmitigated post-Project impacts during the 100-year storm event are as follows:

- Average Flow Depth increase of 0.03-feet
- Average Flow Velocity increase of 0.04 feet/second
- Total Outflow increase of 20 AF (2.6%)

The maximum potential pier scouring at the solar array pedestal supports is 1.22 feet. The structural design and embedment depth of the solar panel pedestal piers shall account for the

maximum potential scour plus a factor of safety. Monitoring after large storm events shall be implemented to detect piers with significant scouring.

Flood Hazards

No FEMA-designated flood zones exist within the vicinity of the Project. The Project site area and vicinity are classified by FEMA as Zone D, indicating an area where there are possible but undetermined flood hazards (FIRM map 06065C Panel 06065C3200G). In areas designated Zone D, no analysis of flood hazards has been conducted (URS 2011). Based on the site drainage report, the potential for flooding on the Project site is considered moderate (URS 2011). Although some surface water collects within the Project area, the Applicant is exploring site preparation methods that will contain water draining onto the site, and would fill the primary low areas, if necessary, to avoid flooding hazards in limited portions of the site area. The Project area also contains washes that periodically contain water during infrequent events, and an agricultural ditch surrounding an offsite jojoba farm also periodically contains water.

In the event that a major storm event occurs during operation of the DQSP, unanticipated flooding could occur onsite. Construction of the Project would involve the disturbance of soil that would slightly alter existing drainage patterns as well as its flow rate and volume. The Project would be designed such that existing drainage patterns would be preserved to the maximum extent practicable. Impacts to onsite drainage systems would be minimized due to the relatively flat terrain and presence of large natural depressions that range from one to five feet deep (TLA 2011). These large depressions fill with water and store significant volumes of water which would attenuate the increased runoff. Although these depressions would result in "flooding" onsite, these are naturally existing conditions that would not be altered as the result of the Project.

In addition, the Applicant would be required to implement Mitigation Measure WATER-3, which would ensure that proposed onsite buildings are protected from flooding, and that all onsite buildings and fill areas are placed outside of frequent flood flow areas.

Water Quality

During operation, the transportation, storage, and use of hazardous materials at the Project could potentially impact water quality at the site. The use of vehicles may involve the accidental release of fuel, oils, brake dust, lubricants, antifreeze, and other potentially hazardous substances at the construction site. These water quality pollutants could become entrained in surface water during storm events, and/or be infiltrated into groundwater and the underlying aquifer, resulting in the degradation of water quality. The Applicant proposes to use engineering and administrative controls as part of the Proposed Action and Alternatives. Engineering controls are the physical or mechanical systems that can prevent the spill of hazardous material from occurring, or that can either limit the amount of a spill or to a confined area. Administrative controls are the rules and procedures that workers at the facility must follow that would help to prevent accidents or to minimize releases if they do occur. These procedures typically are established in worker safety training and emergency response plans. Implementation of both engineering and administrative controls can act as methods of prevention or as methods of response and minimization. Potential spills of hazardous materials would be managed through hazardous materials management measures (see Section 4.9, *Hazards and Hazardous Materials*).

In addition, operation and maintenance of the Project would not result in the discharge of effluent, with the exception of stormwater. The unmitigated post-Project sediment transport will be less than the pre-Project conditions due to soil compaction during construction. In general, the Project site experiences relatively shallow and slow flows, so the nominal increases in post-Project flow depths and velocities do not overcome the decreased erosion potential due to compaction. As such, sediment transport would not increase as a result of the Project. Existing water quality would not be affected by extraction of groundwater during construction.

Springs

According to the NWIS database of Water Resources of the United States that is maintained by the USGS (2013), no springs or other surface water sites are located in the Project boundary or in the area of the larger Palo Verde Mesa Groundwater Basin.

Decommissioning

Groundwater Supply and Recharge

Decommissioning would take approximately one year, and would require approximately the same water use for dust suppression as the construction phase, resulting in additional groundwater pumping of up to 450 to 700 AFY during decommissioning. As described for Project construction, which would use a greater overall volume of groundwater and the same or greater annual pumping rate, model results indicated that drawdown outside of the solar field boundary, as well as potential effects of withdrawals on PVID facilities, would be minimal. Therefore, because decommissioning would result in reduced withdrawals as compared to construction, it would not have an adverse effect on groundwater supply or recharge.

Additionally, operational period pumping would be minimal. Therefore, ceasing of operational period pumping due to decommissioning would be expected to result in a minimal to negligible increase in remaining groundwater supplies within the basin.

To ensure that the actual groundwater drawdown does not exceed the predicted drawdown, Mitigation Measure WATER-4 requires that the Applicant develop and implement a Groundwater Monitoring and Mitigation Plan prior to construction.

Surface Water and Drainage Patterns

Decommissioning of the DQSP would result in a minor reduction in on-site impervious structures, because on-site facilities would be removed. Removal of such facilities would not substantially affect on-site or downstream hydrology, due to the limited extent of such facilities. Similar to DQSP construction, decommissioning could result in alteration of on-site topography, and therefore of on-site drainage patterns. These changes could result in altered erosion and sedimentation patterns, which could affect downstream areas on site or off site. Implementation of Mitigation Measures WATER-1, WATER-2, and WATER-3 would include development and adherence to the recommendations of a Decommissioning Drainage, Stormwater, and Sedimentation Control Plan, would reduce potential impacts from erosion and sedimentation.

Flood Hazards

Decommissioning would remove structures and people from areas that may be subject to flood-related hazards. Effects during decommissioning would be similar to construction. After decommissioning is completed, no further effects would occur.

Water Quality

Decommissioning impacts generally would be similar to those indicated for construction, with respect to potential for release of construction related water quality pollutants. Adherence to Colorado River RWQCB policies and ensure that water quality impacts associated with removal of that facility would be minimized.

4.20.3.2 Alternative 2: Resource Avoidance Alternative

Alternative 2 is located within the same footprint of Alternative 1, but the total ground disturbance would be 2,845 acres instead of 3,831 acres. Approximately 75 percent of the total Project area would be covered or shaded by solar modules under Alternative 2, versus approximately 75 percent coverage under Alternative 1. Water use scenarios for construction and operation would be the same for Alternative 2 as they are for Alternative 1. Construction techniques, general design, and operation of Alternative 2 would the same as for Alternative 1. As such, the hydrology and water quality impacts for Alternative 2 are the same or less as the results of the analysis of hydrology and water quality impacts presented for the Alternative 1.

4.20.3.3 Alternative 3: Reduced Project Alternative

Alternative 3 is located within the same footprint of Alternative 1, but the total ground disturbance would be 2,112 acres instead of 3,831 acres. Approximately 75 percent of the total Project area would be covered or shaded by solar modules under Alternative 3, versus approximately 75 percent coverage under Alternative 1. Water use scenarios for construction and operation would be the same for Alternative 3 as they are for Alternative 1. Construction techniques, general design, and operation of Alternative 3 would the same as for Alternative 1. As such, the hydrology and water quality impacts for Alternative 3 are the same or less as the results of the analysis of hydrology and water quality impacts presented for the Alternative 1.

4.20.4 Application of CEQA Significance Thresholds

HYD-1) Would the Project violate any water quality standards or waste discharge regulations?

Construction of Alternatives 1, 2, or 3 could result in a temporary degradation of water quality. The Project area of Alternatives 2 and 3 would be smaller than that for Alternative 1. Sediment would be the constituent of greatest concern during construction, resulting from potential erosion during excavation, grading, compaction, trenching, and other construction activities. These activities would involve the disturbance of soil which could introduce contaminants to stormwater runoff and affect water quality in surface water and groundwater. Other pollutants that could affect surface and groundwater quality during Project construction include petroleum products (e.g., gasoline, diesel, kerosene, and grease) from operating heavy machinery and

equipment, paints and solvents, lubricants, detergents, fertilizers, and pesticides. Existing water quality would not be affected by extraction of groundwater during construction.

Any sanitary waste produced during construction (e.g., from portable toilets) would be disposed of according to applicable laws, rules, and regulations. In addition, implementation of worker environmental awareness training would provide construction personnel with instruction on their individual regulatory compliance responsibilities. With respect to water quality, the training would include worker responsibilities under the CWA, the SWPPP(s), site-specific BMPs, and about the location of Safety Data Sheets. The training also would provide instructions to notify the foreman and regional spill response coordinator in case of a hazardous materials spill or leak. Instruction also would be provided on the importance of maintaining the construction site in regards to trash disposal.

Alternatives 1, 2, or 3 would implement Mitigation Measure WATER-1 (Implementation of SWPPP) and WATER-2 (Comprehensive Drainage, Stormwater, and Sedimentation Control Plan) during construction. This includes implementing appropriate stormwater BMPs, as required in WATER-1. Implementation of the mitigation measures would reduce the potential water quality degradation of stormwater emanating from the DQSP site. With implementation of Mitigation Measures WATER-l and WATER-2, potential impacts to water quality would be minimized during construction. Therefore, construction impacts related to the violation of water quality standards or waste discharge requirements would be less than significant for Alternatives 1, 2, or 3.

During the operation of Alternatives 1, 2, or 3, no water quality standards or waste discharge requirements are anticipated to be violated as routine activities would be conducted per all applicable standards. Very little vehicular traffic will occur at the site, so the potential for runoff contaminated by vehicle pollutants would be low.

Transportation, storage, and use of hazardous materials at the Project could potentially impact water quality at the site. The use of vehicles may involve the accidental release of fuel, oils, brake dust, lubricants, antifreeze, and other potentially hazardous substances at the construction site. These water quality pollutants could become entrained in surface water during storm events, and/or be infiltrated into groundwater and the underlying aquifer, resulting in the degradation of water quality. The Applicant would implement engineering and administrative controls as methods of prevention or as methods of response and minimization. Potential spills of hazardous materials would be managed through hazardous materials management measures (see Section 4.9, *Hazards and Hazardous Materials*).

A septic system and leach field would be located at the O&M building, and would serve the Project's sanitary wastewater treatment needs. Because of the small operational work force for Alternatives 1, 2, or 3, volumes of sanitary waste discharged to the septic system and leach field will be no more than a few hundred gallons per day during operation. Permits for the septic system will be obtained from Riverside County, as needed. Soil percolation tests would be performed in order to demonstrate that an on-site septic system and leach field is feasible at the planned location.

Ongoing O&M of Alternatives 1, 2, or 3 would result in the discharge stormwater. The Project area of Alternatives 2 and 3 would be smaller than that for Alternative 1. The unmitigated post-Project sediment transport will be less than the pre-Project conditions due to soil compaction during construction. In general, the Project site experiences relatively shallow and slow flows, so

the nominal increases in post-Project flow depths and velocities do not overcome the decreased erosion potential due to compaction. Mitigation Measure WATER 2 will be implemented to ensure that the retention basins and other design features retain stormwater onsite. As a result, O&M of Alternatives 1, 2, or 3 would not violate any water quality standards or waste discharge requirements. The impact from O&M of Alternatives 1, 2, or 3 would be less than significant.

HYD-2) Would the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Construction and operation of the O&M buildings, On-Site Substation, and equipment pads would create new areas of impermeable surfaces that could potentially interfere with groundwater recharge; however, the new impermeable surfaces would be minimal in comparison to the total solar facility area which would be left in a pervious condition and would not significantly interfere with groundwater recharge.

Water supplies required for construction, operation, and maintenance of Alternatives 1, 2, or 3 would be provided by onsite groundwater wells. An analysis of impacts to groundwater supply and recharge was conducted based on modeling of the anticipated effect of Project-related groundwater withdrawal on the overall groundwater balance in the PVGB. The modeling also assessed potential impacts from the effect of groundwater withdrawal on the PVID drains, and the effect of the withdrawal on nearby groundwater wells.

Four existing well locations within the footprint of the Project were evaluated in the model as the pumping locations. Groundwater pumping simulations were modeled for both a 25-month and 48-month construction scenarios with 30 years of operation. The 25-month construction scenario assumes water usage of 700 AFY during the construction period for a total of 1,400 AF, and water usage of 38 AFY for the operational period of 30 years for a total of 1,140 AF. Total Project water usage of 2,540 AF would be pumped under the 25-month construction and 30 year operational scenario (32 years).

The 48-month construction scenario assumes water usage of 450 AFY during the construction period for a total of 1,800 AF, and water usage of 38 AFY for the operational period of 30 years for a total of 1,140 AF. Total Project water usage of 2,940 AF would be pumped under the 48-month construction and 30 year operational scenario (34 years).

Results from both scenarios indicated that the model-predicted drawdown outside of the solar field boundary would be less than 0.1 foot at the end of construction and at the end of operational pumping. Drawdown would primarily be constrained to the mesa area during construction and operation. Additionally, under the 450 AFY construction scenario, the model predicts that the extent of drawdown is less than predicted for the construction scenario with the higher pumping rate (700 AFY) and shorter 25-month duration. Under both construction scenarios, the impacts from water use are negligible to offsite water wells.

The cumulative change in flow through the PVID drains was evaluated for the two varying construction pumping rate scenarios and both scenarios show that there is a very small change in the PVID drain mass balance between the non-pumping and pumping condition at the end of construction and end of operation. For the 700 AFY construction scenario, there was a total

change of about 476 AF at the end of the combined construction and operational period of 32 years. The total change represents 0.0037 percent of the 12.8 million AF of the throughput in the PVID drains over 32 years. For the 450 AFY construction scenario, there was total change of about 520 AF at the end of the combined construction and operational period of 34 years. The total change represents 0.0039 percent of the 13.5 million AF of the modeled throughput in the PVID drains over 34 years.

To ensure that groundwater levels are not impacted by the Project, Mitigation Measure WATER-4 (Groundwater Monitoring and Mitigation Plan) would be implemented. Based on the groundwater modeling conducted for the Project and with the implementation of WATER-4, impacts to groundwater supplies, groundwater recharge and groundwater levels during construction and operation would be less than significant for Alternatives 1, 2, or 3.

HYD-3) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Alternative 1 would cause minor impacts to the existing drainage shed area. During construction, the Project would alter the soil's hydraulic characteristics within the solar arrays due to vegetation removal and grading. Vegetation would be disked under, mulched or composted and retained onsite to assist in erosion control and limit waste disposal. Grading activities would consist of micrograding within sections of the solar array fields; however, the macro-level topography would remain unchanged.

A drainage study conducted for the Project shows that impacts to on-site drainage systems would be minimized due to the relatively flat terrain and presence of large natural depressions that range from one to five feet deep (TLA 2011). These large depressions store significant volumes of water which would attenuate the increased runoff. After construction, increases in flow depth, velocity and outflow would be mitigated with onsite retention basins sized with at least 20 AF of combined storm water storage capacity. In addition, sediment transport would be less than the pre-Project conditions due to soil compaction during construction.

The Project would implement Mitigation Measures WATER-1 (Implementation of SWPPP) and WATER-2 (Comprehensive Drainage, Stormwater, and Sedimentation Control Plan) during construction. This includes implementing appropriate stormwater BMPs, as noted in WATER-1. Implementation of the mitigation measures would reduce the potential water quality degradation of stormwater emanating from the DQSP site.

With implementation Mitigation Measures WATER-l and WATER-2, impacts related to erosion or siltation as a result of an altered drainage patterns would be less than significant under Alternatives 1, 2, or 3.

HYD-4) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

As described in HYD-3, construction activities associated with Alternatives 1, 2, or 3 would involve the disturbance of soil that would slightly alter existing drainage patterns as well as its

flow rate and volume. The Project would be designed such that existing drainage patterns would be preserved to the maximum extent practicable. Impacts to onsite drainage systems would be minimized due to the relatively flat terrain and presence of large natural depressions that range from one to five feet deep (TLA 2011). These large depressions fill with water and store significant volumes of water which would attenuate the increased runoff. Although these depressions would result in "flooding" onsite, these are naturally existing conditions that would not be altered as the result of the Project.

With implementation of Mitigation Measures WATER-1, WATER-2, and WATER-3, construction impacts from Alternatives 1, 2, or 3 related to flooding onsite or offsite due to a change in drainage patterns or an increase in the rate or amount of surface runoff would be less than significant.

The structural components of the Project (solar panels) would not significantly alter the existing drainage patterns, including the rate and amount of surface flow. In addition, creation of impermeable surfaces relative to the Project area would be nominal allowing for infiltration of stormwater at rates close to existing conditions. Overall, the Project would result in slight alterations in the existing drainage pattern of the site or surrounding area (refer to discussion in HYD-3). However, the nominal post-Project increases in flow depth, velocity and outflow would be mitigated with onsite retention basins sized with at least 20 AF of combined storm water storage capacity. With implementation of Mitigation Measures WATER-1, WATER-2, and WATER-3, operational impacts from Alternatives, 2, or 3 related to flooding onsite or offsite due to a change in drainage patterns or an increase in the rate or amount of surface runoff would be less than significant.

HYD-5) Would the Project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Creation of new access roads (both gravel and compacted earth/native soil) and construction of the On-Site Substation, and O&M facility, along with grading for installation of the solar array, would create additional sources of runoff. During earthwork activities, surface water control would be managed through the implementation of Mitigation Measures WATER-1 and WATER-2. With implementation of Mitigation Measures WATER-1 and WATER-2, Alternatives 1, 2, or 3 would not provide substantial increases in the amount of runoff or additional sources of polluted runoff, and construction impacts related to an exceedance of the capacity of existing drainage systems or a substantially greater contribution of polluted runoff would be less than significant.

During operation, nominal increases in flow depth, velocity and outflow are anticipated and would be mitigated with onsite retention basins sized with at least 20 AF of combined storm water storage capacity. Once the Project is in operation, the Project site conditions would be similar to the existing conditions and additional sources of polluted runoff would be insignificant. With implementation of Mitigation Measure WATER-2, Alternative 1, 2, or 3 operation impacts related to an exceedance of the capacity of existing or planned stormwater drainage systems or a substantially greater contribution of polluted runoff would be less than significant.

HYD-6) Would the Project otherwise substantially degrade water quality?

Ground disturbance related to construction of Alternatives 1, 2, or 3 could potentially degrade water quality through the inadvertent release of hazardous materials. The effects of the Project on water quality are discussed in detail under HYD-1. Please refer to this section for explanations of the impact determination during construction and operation.

To ensure that groundwater levels and quality are not impacted by the Project, Mitigation Measure WATER-4 (Groundwater Monitoring and Mitigation Plan) would be implemented. With implementation of Mitigation Measure WATER-4, impacts related to substantially degrading water quality would be less than significant for Alternatives 1, 2, or 3.

HYD-7) Would the Project place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Alternatives 1, 2, or 3 would not include the placement of housing within a 100-year flood hazard area as mapped on the FEMA Flood Insurance Rate Map. In addition, Mitigation Measure WATER-3 would be implemented to reduce impacts from flooding. Therefore, no impacts would occur from placing housing within a 100-year flood hazard area under Alternatives 1, 2, or 3.

HYD-8) Would the Project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

The Project site is classified by FEMA as Zone D, indicating that there are possible but undetermined flood hazards (FIRM map 06065C Panel 06065C3200G). A drainage study conducted for the Project shows presence of large natural depressions that range from one to five feet deep (TLA 2011). These large depressions store significant volumes of water which would attenuate the increased runoff. After construction, increases in flow depth, velocity and outflow would be mitigated with on-site retention basins sized with at least 20 AF of combined storm water storage capacity. In addition, sediment transport would be less than the pre-Project conditions due to soil compaction during construction. In addition, Mitigation Measure WATER-3 would be implemented to reduce impacts to structures from flooding. During construction and operation, structures would not be placed within any known 100-year flood hazard area. Therefore, there would be no impacts under Alternatives 1, 2, or 3 related to the placement of structures within a 100-year flood hazard area which would impede or redirect flows.

HYD-9) Would the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Alternatives 1, 2, or 3 would not be located in the vicinity of a levee or dam. Portions of the Project would be located in areas with large depressions that are capable of storing significant volumes of water; however, structures would not be located in these areas. In addition, Mitigation Measure WATER-3 would be implemented to reduce impacts to the Project from flooding. As such, the Project would not expose people or structures to significant risk of loss, injury, or death involving flooding. Impacts related to flooding, including as the result of the failure of a levee or dam would be less than significant.

HYD-10) Would the Project be at risk of inundation by seiche, tsunami, or mudflow?

Alternatives 1, 2, or 3 are not located near a body of water such as a lake or ocean; therefore, there would be no impacts to the Project from a seiche or tsunami.

Mudflows are flows of water that contain large amounts of silt, sand, boulders, organic material, and other debris. Mudflows occur on steep slopes where vegetation is not sufficient to prevent rapid erosion but can occur on gentle slopes if other conditions are met such as large, sudden rainfall events. The Project site and immediate surrounding area is relatively flat and is in an area that is characterized by dry climatic conditions. Annual rainfall in the Project area is approximately 3.5 inches per year, although high intensity storm events may occur. High intensity storms could generate significant runoff from steep mountains in the surrounding Project area. These mountains are composed of metamorphic and granitic rocks and are less prone to mudflows. As such, there would be no impact to the Project from mudflows.

HYD-11) Would the Project include new or retrofitted Stormwater Treatment Control BMPs (e.g., water quality treatment basins, constructed treatment wetlands), the operation of which could result in significant environmental effects (i.e., increased vectors and/or odors)?

Alternatives 1, 2, or 3 would include onsite retention basins located at the upstream and/or downstream edges of the Project. Retention basins would be sized with at least 20 AF of combined stormwater storage capacity. These retention basins would contain water only after large storm events and shortly thereafter. Annual rainfall in the Project area is approximately 3.5 inches per year, therefore; construction and operation of these stormwater features are not expected to result in significant environmental effects. The impacts would be less than significant.

HYD-12) Would the Project cause changes in absorption rates or the rate and amount of surface runoff?

See HYD-3 and HYD-4 above. The Project would cause slight changes in the absorption rates and amount of surface water to onsite or offsite drainages due to compaction. However, the nominal post-Project increases in flow depth, velocity and outflow would be mitigated with on-site retention basins sized with at least 20 AF of combined storm water storage capacity.

The Project will implement Mitigation Measures WATER-1 and WATER-2. Appropriate stormwater BMPs are included in these mitigation measures. Implementation of the mitigation measures would help manage surface runoff. With implementation of WATER-l and WATER-2, potential alteration to drainages would be minimized during construction and operation, and impacts to runoff and absorption rates from Alternatives 1, 2, or 3 would be less than significant.

HYD-13) Would the Project cause changes in the amount of surface water in any water body?

See HYD-2 above. If groundwater is used as the water supply, the Project would reduce the amount of water flows to the PVID drains. For the 700 AFY construction scenario, there was a total change to the PVID drains of about 476 AF at the end of the combined construction and operational period of 32 years. The total change represents 0.0037 percent of the 12.8 million AF

of the throughput in the PVID drains over 32 years. For the 450 AFY construction scenario, there was total change of about 520 AF at the end of the combined construction and operational period of 34 years. The total change represents 0.0039 percent of the 13.5 million AF of the throughput in the PVID drains over 34 years. These changes in flow through are so small that they could not be reliably measured in the PVID drains, and would not have an adverse effect on Colorado River water supplies or diversions. If surface water from PVID is used, PVID has confirmed that the Project would not adversely affect their water supplies or other customers. Based on the groundwater modeling conducted, the small changes to surface water (PVID drains and Colorado River), would be less than significant under Alternatives 1, 2, or 3..

4.20.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.20 would be maintained. There would be no water use, and no modification of site hydrology. Therefore Alternative 4 would not result in any water resources impacts.

4.20.6 Cumulative Impacts

The geographic scope of the cumulative impacts analysis with respect to water resources includes those areas overlying the PVGB for groundwater-related impacts, and the watershed for water quality and drainage-related impacts. The temporal scope for potential cumulative impacts includes the construction, operation, and maintenance periods of the Project.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

Groundwater

An assessment was conducted to evaluate the collective water supply requirements by multiple proposed renewable and other energy projects within the geographic area of the Palo Verde Mesa/Valley. The cumulative project list was prepared as part of the groundwater modeling report conducted for the Project and in coordination with the BLM (URS 2016d). In addition to the proposed DQSP, six other energy projects were identified on the mesa. Project schedules, operational and construction water supply requirements, and the source of the water supply were evaluated for each project identified. Tables 2A and 2B of the groundwater model for the Project (URS 2016d) provide a summary of the individual water use for each project and provide an assessment of total yearly and cumulative use for the 25-month and 48-month construction scenarios and the operational period of 30 years.

For the 700 AFY construction pumping scenario, the cumulative energy projects combined annual construction and operational water requirements range from an estimated 1,831 AFY to 4,831 AFY at the end of the 25-month construction period. During the first year of construction, the Project represents about 38 percent of the total combined annual water usage from energy projects in the PVGB, and approximately 14 percent during the second year of construction.

Cumulative total water use from these energy projects, through 2018, is estimated to be approximately 7,603 AF. This represents approximately 0.11 percent of the estimated 6.84 million AF of groundwater storage capacity of the PVGB.

Under the 450 AF construction scenario the cumulative energy projects combined annual operational water requirements range from an estimated 1,581 up to 4,581 AFY during the 48-month construction period. During the first year of construction, the Project represents about 28 percent of the total combined annual water usage from energy projects in the PVGB, and approximately 13 percent during the fourth year of construction. Cumulative total water use from these energy projects, through 2020, is estimated to be approximately 15,167 AF. This represents approximately 0.22 percent of the estimated 6.84 million AF of groundwater storage capacity of the PVGB.

Given the saturated thickness of the alluvial deposits of several hundred feet in the area, the estimated 6.84 million AF of groundwater storage capacity of the PVGB, and the small cumulative change in flow through the PVID drains, the Project would not contribute to cumulative impacts to groundwater levels and recharge during construction and operation (impact HYD-2). In addition, pumping of groundwater for the Project on the mesa would not impact the quality of the groundwater during construction and operation. During decommissioning, the cumulative impacts to groundwater would be similar to those during construction because groundwater would be used for decommissioning activities.

Surface Water Supplies

As discussed in Section 2.3.3.8, an off-site water supply may be used to supplement, or in place of, water from groundwater wells. The source of this water would be the PVID, which obtains water from the Colorado River through Priority 1 and Priority 3 rights pursuant to a 1933 Water Delivery contract with the United States (URS 2016a, provided in Appendix Y).

The majority of the Project site is located within the PVID service boundaries, and PVID has confirmed that PVID may supply water to areas within these boundaries for beneficial uses, which would include the Project. PVID has provided a letter, included as Appendix C of the WSA, indicating that they are capable and willing to supply the water for Project needs, and that their water supply and other customers would not be negatively impacted.

Other solar energy Projects in the area, including BMSP and the Palo Verde Mesa Solar Project, use surface water supplied by PVID. BMSP will use 451 AFY during its three year construction period, and a negligible amount during operations. Palo Verde Solar will use 500 AFY during its three year construction period, and 302 AFY during operations. Both sites occupy former agricultural lands, so the amount of water used for solar project construction and operations is much lower than was used for irrigation when those properties were used for agriculture.

Surface Water Hydrology

Cumulative surface water hydrology impacts can occur if the effects of individual projects, including modification of the amount of surface water or sedimentation downgradient from a project site, would overlap with the effects of another project. As discussed in the analysis of impacts HYD-3 through HYD-5, HYD-11, and HYD-12 in Section 4.20.4, a drainage study conducted for the Project shows that impacts to on-site drainage systems would be minimized due to the relatively flat terrain and presence of large natural depressions that range from one to

five feet deep (TLA 2011). These large depressions store significant volumes of water which would attenuate the increased runoff. After construction, increases in flow depth, velocity and outflow would be mitigated with onsite retention basins sized with at least 20 AF of combined storm water storage capacity. Because of these features, surface water flow onto the Project site from upgradient is attenuated. In addition, onsite stormwater flow would be managed under several regulatory programs and mitigation measures, including Mitigation Measures WATER-1 (Implementation of SWPPP) and WATER-2 (Comprehensive Drainage, Stormwater, and Sedimentation Control Plan). Similar BMPs and regulations are required of any projects located upgradient of the Project site. Because flow from upgradient projects is mitigated by BMPs and regulatory controls, flow onto the Project site from upgradient is attenuated in onsite features, and flow off of the Project site is mitigated by BMPs and regulatory controls, the contribution of the Project to cumulative surface water hydrology impacts is not cumulatively considerable.

The cumulative change in flow through the PVID drains was evaluated for the two varying construction pumping rate scenarios and both scenarios show that there is a very small change in the PVID drain mass balance between the non-pumping and pumping condition at the end of construction. For the 700 AFY construction scenario, there was a total change of about 0.36 AF at the end of construction. The total change represents 0.000031 percent of the 1.2 million AF of the throughput in the PVID drains over 25 months. For the 450 AFY construction scenario, there was total change of about 7.87 AF at the end of construction. The total change represents 0.00037 percent of the 2.3 million AF of the throughput in the PVID drains over 48 months.

These small changes in flow through could not be reliably measured in the PVID drains and thus the model prediction cannot be verified. As noted, the change is very small in relationship to the overall PVID drain throughput in the model, and as such should be considered within the error of the model to reliably predict the change in mass flux from the drains. Therefore the contribution of the Project to the amount of surface water (impact HYD-13) would not be cumulatively considerable.

The Project would not result in housing or structures in a 100-year flood zone (impacts HYD-7 and HYD-8), and would not be subject to hazards associated with levees or dams (impact HYD-9) or seiche, tsunami, or mudflow (impact HYD-10).

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The cumulative impacts for Alternative 2 would be similar to those of Alternative 1 because even with the reduced ground disturbance footprint, groundwater use would be the same during construction, operation, and decommissioning as for Alternative 1. For Alternative 2, it is assumed that water use for other projects on the mesa would remain the same during the construction and operation as for of Alternative 1. In addition, the construction and operational periods would be the same for Alternative 2 as they are for Alternative 1, therefore, cumulative impacts for Alternative 2 are less than significant.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The cumulative impacts for Alternative 3 would be similar to those of Alternative 1 because even with the reduced ground disturbance footprint and reduced output, groundwater use would be the same during construction, operation, and decommissioning as for Alternative 1. For Alternative 3, it is assumed that water use for other projects on the mesa would remain the same during the construction and operation as for of Alternative 1. In addition, the construction and operational periods would be the same for Alternative 3 as they are for Alternative 1, therefore, cumulative impacts for Alternative 3 are less than significant.

4.20.7 Residual Impacts

Even with mitigation measures, the Project would result in minor adverse impacts to water resources. These would include a minor reduction in groundwater levels, and minor changes to stormwater flow characteristics. Although evidence indicates that project wells would not induce flow from the Colorado River, some uncertainty remains. Implementation of the mitigation measures identified above (i.e., WATER-4) would avoid or offset potential impacts, if any, related to Colorado River water. Consequently, no residual impact would occur. Following decommissioning, groundwater use would cease, and site topography would be restored. Therefore, both impacts would cease to occur following decommissioning of the Project. If releases of hazardous materials were to occur and result in groundwater contamination that could not be remediated before the completion of decommissioning, it is possible that residual groundwater contamination would remain after surface-based decommissioning activities are completed. As specified in Mitigation Measure WATER-1, decommissioning would not be considered complete until BLM approved completion of any groundwater remediation activities required of the Applicant.

4.21 Wildland Fire

4.21.1 Methodology for Analysis

This analysis of impacts of the Project on wildland fire ecology assesses the size, location, and environmental setting of the Project; the number and type of vehicles that would access the site for construction, operation, maintenance, and decommissioning activities; and potential fire hazards resulting from operation of the electrical infrastructure.

4.21.1.1 CEQA Significance Criteria

The criteria listed below were used to determine if the DQSP would result in significant impacts under CEQA to wildland fire ecology. These indicators are the same as the significance criteria for wildland fire listed in the CEQA Environmental Checklist, Appendix G of the state CEQA Guidelines. The Proposed Action would result in an adverse impact on wildland fire ecology if it would:

Fire-1) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.21.2 Applicant-Proposed Measures

There are no APMs to address potential effects of wildland fires.

4.21.3 Direct and Indirect Impacts

4.21.3.1 Alternative 1: Proposed Action

Construction

Construction activities would involve the use of vehicles and heavy machinery, which could potentially result in the ignition of a wildfire through contact between heated mufflers and vegetation. Wildfire ignition could also occur as a result of personnel smoking onsite. Even though potential ignition sources such as heavy equipment would be used during construction, the probability of a wildfire to occur as a result of Project construction would be low due to the lack of fuel. One of the first activities to occur as part of construction would be removal of vegetation and site grading, so any potential fuel material would be removed during the initial stages of construction.

If the introduction of invasive, non-native plants is not controlled during construction, over time the Project site could become dominated with non-native plants that tend to increase the frequency and severity of wildfires. As described in Section 3.21, the occurrence of wildfires in the area historically has been low; however, repeated fires are known to decrease the perennial plant cover and to aid some invasive annual plants. In turn, where they gain widespread propagation, these invasive plants would provide fuel to carry flames, potentially resulting in larger fires in the future. Surface disturbing activities and vehicle use that promotes the introduction of invasive plants would increase this likelihood.

The proposed vegetation management measures described in Section 2.3.7.2, including an Integrated Weed Management Plan, would minimize the potential for weed colonization and dominance on site by including implementation of a risk assessment of the invasive weed species currently known within the study area, procedures to control their spread on site, and procedures to help minimize the introduction of new weed species. Implementation of these measures would not completely eliminate the introduction of noxious weeds into the study area, but would minimize their introduction and control their spread on the Project site.

During construction, electrical equipment would only be energized after the necessary inspection and approval, so there is minimal risk of any electrical fire. Workers would monitor fire risks during both construction and operation, to ensure that prompt measures are taken to mitigate identified risks. In addition, transformers located on-site would be equipped with coolant that is non-flammable, biodegradable, and contains no polychlorinated biphenyls or other toxic compounds. The network of access roads would be developed to ensure that there is adequate access for fire control and emergency vehicles to the site.

Because implementation of the Project would remove the land area from other uses, it would preclude current OHV and other casual uses. As a result, implementation of the Project may slightly decrease the potential for wildfire risks associated with recreational and other casual uses.

Impacts of wildland fire that escapes control and spreads beyond the Project could include permanent damage to biological resources and other natural resources, such as air quality and water quality, in addition to the potential for loss of life and destruction of property.

As discussed in Section 2.3.7.3, the Applicant would coordinate with Riverside County to ensure that appropriate measures are implemented to control the risk of fire. Measures may include installation of an aboveground water storage tank adjacent to the O&M Building, which would be sized to meet Riverside County Fire Department requirements, as applicable, to supply sufficient fire suppression water during construction and operations.

The BLM would be first responder for wildland fires and the County for structures. The Project area falls within acceptable Total Response Time policy standards for an 'outlying' land use area based on its proximity to the nearest RCFD station (Station 45, Blythe Air Base, 17280 W. Hobson Way, Blythe, CA 92225) and that station's ability to meet the seventeen minute and 30 second response time standard. Additionally, the Project site is in close proximity to the City of Blythe Volunteer Fire Department.

Mitigation Measure FIRE-1 would require the Applicant to prepare and implement a Fire Safety Plan which incorporates the use of appropriate fire protection equipment, worker training, and consultation with local fire departments to identify appropriate protocols and procedures for fire prevention and early response to minor fire. These measures would minimize the potential for a wildfire ignition to occur as a result of Project-related construction activities and the presence of personnel on site. The plan would comply with applicable Riverside County regulations, and would be coordinated with the Riverside County Fire Department and BLM.

Operations

Wildfire risk associated with the presence of vehicles, equipment, and workers during operations would be reduced from that associated with construction. Once construction is completed, the

number of workers, vehicles, and equipment would be a small fraction of that present during construction.

During operation and maintenance of the Project, fire protection systems for the solar plant site would include a fire protection water system for protection of the O&M building and portable fire extinguishers. An aboveground process water/firewater storage tank would be located adjacent to the O&M Building. The size and dimensions of the tank would be determined based on Riverside County Fire Department requirements for firewater storage. Additional fire protection measures would include sprinkler systems in the O&M Building; a FM200 fire suppression system, or equivalent, in the facility control room at the O&M building; and portable carbon dioxide (CO_2) fire extinguishers mounted at the power conversion system units. All Project facilities would be designed, constructed, and operated in accordance with applicable fire protection and other environmental, health and safety requirements. Mitigation Measure FIRE-1 would apply to operations, as well as construction.

Electrical transmission lines can initiate a fire if an object, such as a tree limb or kite, simultaneously contacts the subtransmission line conductors and a second object, such as the ground or a portion of the supporting pole, or if two conductors make contact. Conductor-to-conductor contact can occur when extremely high winds force two conductors on a single pole to oscillate so excessively that they contact one another. This contact can result in arcing (sparks) that can ignite nearby vegetation. Electrical arcing from power is more prevalent for lower voltage distribution lines than for transmission lines such as those proposed gen-tie lines because distribution lines are typically on shorter structures and in much greater proximity to trees and vegetation. Additionally, lightning strikes on power lines could create power surges that could result in a fire. Fire hazards from transmission lines are reduced through the use of taller structures and wider rights-of-way. CPUC General Order No. 95 and PRC §4293 contain rules and regulations for vegetation clearance surrounding electrical transmission lines. In general, the potential for such fires to occur during operations is expected to be minimal, because of the lack of trees and vegetation in the Project area.

Climate change would result in a small but general increase in temperature, and also could result in an increase in the frequency of extreme weather events that could generate wildfires, such as increased frequency of drought and heat waves or wetter seasons that increase fuel loads, during operation and maintenance of the Project. Wind-blown flaming debris from a fire can ignite vegetation in the surrounding area. The Project's vegetation management measures, fire protection systems, and adherence to building codes relevant to fire safety and other applicable laws and regulations would reduce the potential for wildfire ignition and the potential for a wildfire to spread out of control. The Applicant would be required to comply with vegetation clearance requirements around structures at the site. In addition, access roads across the Project site would break the continuity of fuels at the site, which would slow or stop the progression of potential wildfires originating at the site.

Decommissioning

Impacts from decommissioning would be similar to those described for construction.

4.21.3.2 Alternative 2: Resource Avoidance Alternative

The potential for wildland fire impacts under Alternative 2 would be lower than that described for the Proposed Action. The potential risks associated with vehicles and equipment, workers smoking, invasive weeds, and electrical hazards would be the same. However, the alternative would require a smaller number of vehicles and workers, and a reduced acreage, so the chances of ignition and spread of a fire would be reduced. The provisions of Mitigation Measure Fire-1 would apply to Alternative 2, as to the Proposed Action.

4.21.3.3 Alternative 3: Reduced Project Alternative

The potential for wildland fire impacts under Alternative 3 would be lower than that described for Alternatives 1 and 2. The potential risks associated with vehicles and equipment, workers smoking, invasive weeds, and electrical hazards would be the same. However, Alternative 3 would require a smaller number of vehicles and workers, and a reduced acreage, so the chances of ignition and spread of a fire would be reduced from that of Alternatives 1 and 2. The provisions of Mitigation Measure Fire-1 would apply to Alternative 3, as to the Proposed Action.

4.21.4 Application of CEQA Significance Thresholds

Fire-1: Would the Project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Alternatives 1, 2, or 3 would not result in persons living or working in areas of greater fire risk. Alternatives 1, 2, and 3 would present a minimal risk of igniting wildland fires that would expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impact would occur under Alternatives 1, 2, or 3.

4.21.5 Alternative 4: No Action Alternative

Under the No Action Alternative, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved, the BLM would continue to manage the land under its land use jurisdiction consistent with the site's multiple use classification as described in the CDCA Plan, as it was amended by the Western Solar Plan.

If the site remained undeveloped, the existing environmental setting described in Section 3.21 would be maintained. The plant alliances at the Project site would not be expected to change noticeably from existing conditions and therefore, Alternative 4 would not result in any impacts to wildland fire ecology.

4.21.6 Cumulative Impacts

The geographic area for cumulative wildland fire impacts includes other projects which could combine with the effects of the Proposed Action to contribute to the risk for wildland fire. For purposes of this analysis, this area is estimated to be within one mile of the site boundary. The past, present, and reasonably foreseeable future projects included within this area include the BMSP, the transmission lines on the northern and southwestern boundaries of the Project area,

the CRSS, and the proposed RE Crimson Solar Project. The temporal scope for analysis of wildland fire impacts from the Project is the life of the Project, including construction, operations, maintenance, and decommissioning phases. Following decommissioning, the Project would no longer contribute to potential wildland fire impacts.

Alternative 1 – Proposed Action

Construction, Operations, and Decommissioning

The past, present, and reasonably foreseeable future projects could increase the risk of wildland fire by increasing the number of vehicles, equipment, and persons in the area, and through the introduction of non-native vegetation. More worker and vehicle activity in and around the Project would increase the chance of wildfire ignitions. The installation and operation of transmission lines and the use of equipment (including motor vehicles) that could spark or otherwise provide an ignition source could combine to cause or create a cumulative impact. Additionally, the increased human presence and disturbance caused by the construction, operation and overall development that would occur under the cumulative scenario could advance the rate of invasion by non-native vegetation and, thereby, contribute to fire fuel-loading that would burn with higher flames and hotter temperatures. Impacts of wildland fire could include damage to biological resources and other natural resources, such as air quality and water quality, in addition to the potential for loss of life and destruction of property. Because the plant alliances in the Project area are not fire-adapted, increases in fire frequency or size would be detrimental to the area's ecology.

Each of the past, present, and future projects would operate under the fire prevention and response requirements of the Riverside County Fire Department and/or BLM-required mitigation measures associated with fire prevention and response. Project features such as vegetation treatment, weed management, and worker safety fire precautions at all of the projects would lower the probability of such ignitions. Therefore, cumulative impacts would be less than significant.

Alternative 2 – Resource Avoidance Alternative

Construction, Operations, and Decommissioning

The incremental impact of Alternative 2 to cumulative wildland fire impacts would be slightly reduced from that of the Proposed Action, because of the lower numbers of workers, vehicles, and equipment.

Alternative 3 – Reduced Project Alternative

Construction, Operations, and Decommissioning

The incremental impact of Alternative 3 to cumulative wildland fire impacts would be slightly reduced from that of Alternatives 1 and 2, because of the lower numbers of workers, vehicles, and equipment.

Alternative 4 – No Action

For the No Action Alternative, wildfire risks would continue to be associated with OHV and other casual uses of the area.

4.21.7 Residual Impacts

Despite the fire and weed control programs that would be incorporated into the Project, the changes in vehicle use accessing the area for construction, operation, maintenance, and decommissioning would increase the likelihood of wildfires in the Project area to a slight, but unknown degree. The existing Fire Hazard Severity Zone (FHSZ) classification for this area would likely remain moderate.

CHAPTER 5
OTHER NEPA AND CEQA CONSIDERATIONS

5.1 Irreversible and Irretrievable Commitments of Resources

State CEQA Guidelines Section 15126.2 and NEPA Regulations (40 Code of Federal Regulations [CFR] Part 1502.16, 1508.8(b)), the Bureau of Land Management (BLM) NEPA Handbook (H-1790-1 Section 9.2.9) require a discussion of irreversible or irretrievable commitments of resources that would be associated with the implementation of any Proposed Action or action alternative.

Resources irreversibly or irretrievably committed to by a Proposed Action are those used or modified on a long-term or permanent basis. An irretrievable commitment of resources includes activities such as the use of non-renewable resources like metal, wood, fuel, paper, and other natural or cultural resources. These resources are considered irretrievable in that they would be used or modified by a Proposed Action, and are no longer available for other potential uses. An irreversible commitment of resources includes activities such as the unavoidable destruction of natural resources that could not, or would not, be restored. Such a commitment could occur if releases of hazardous materials associated with the Project were to result in environmental damages that could not be remediated.

Each of the DQSP action alternatives would irreversibly and irretrievably commit resources over the 30-year life of the Project. Project construction would require use of water, electricity, and fossil fuels for delivery and assembly of components. These would be consumed during construction, and would not be retrievable following Project decommissioning. The Project components would be made of metal and glass, which would not be available for any other uses during the 30 year life of the Project. After 30 years, the Project would be decommissioned. Some of the metal and glass components would be retrieved, and would be used for other purposes. Although the land area would be re-graded and re-vegetated, it is likely to take a long time before the area would be restored to its pre-Project state; open desert lands and sensitive desert habitats can take a long time to recover from disturbances such as development.

The Project is a renewable energy project intended to generate solar energy to reduce reliance on fossil fuels. Over its projected 30-year life, the Project would contribute incrementally to the reduction in demand for fossil fuel use for electricity-generating purposes. By reducing the demand for other fuel sources, the Project would have a long-term, beneficial effect in avoiding irretrievable use of non-renewable fossil fuels by other energy projects.

5.2 Significant Unavoidable Impacts

Environmental impacts of the Project and action alternatives are discussed in Chapter 4 of this Draft PA/EIS/EIR. As required by CEQA, mitigation measures have been proposed to reduce significant environmental impacts to a level of less than significant. As required by NEPA, where potential adverse environmental impacts have been identified, mitigation measures are proposed that, when implemented, would reduce the impact.

Summaries of the impacts and mitigation measures for each resource area are provided in the Executive Summary. Unavoidable, significant environmental impacts include:

- Emissions estimates for Project construction and decommissioning would exceed applicable MDAQMD daily and annual thresholds for NO_x, PM_{10}, and $PM_{2.5}$. The emissions estimates assume that the APMs and Mitigation Measures AQ-1 and AQ-2 would be applied, but these measures would not reduce these emissions to be below MDAQMD thresholds, resulting in a significant and unavoidable impact for construction and decommissioning. This impact would be temporary, occurring only during active construction and decommissioning, and would cease once each of these phases is completed. This impact is furthermore unavoidable, regardless of which alternative is selected.
- Though the existing visual character of the Project site is already influenced by existing transmission lines and other energy projects, the Project would result in substantial degradation of the existing visual character and visual quality of the Project site when viewed from elevated locations. Mitigation Measures VIS-1, 2, 3 and 4 would reduce visual contrast of the Project during construction, operation and decommissioning; however, these measures would not fully mitigate the significant visual impact of the Project. Therefore, the Project would result in a significant and unavoidable impact to visual resources.

5.3 Energy Conservation

Appendix F of the state CEQA Guidelines provides guidance for assessing the significance of energy conservation-related impacts of projects. The appendix identifies the following means to achieving the goal of energy conservation:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on natural gas and oil; and
- Increasing reliance on renewable energy sources.

Based on Appendix F, energy conservation-related environmental impacts would be considered significant if a project would:

a) Result in substantially inefficient or wasteful consumption of energy;

b) Affect local and regional energy supplies to the point that additional capacity of those energy supplies would be required;

c) Adversely affect peak and base period demands for electricity and other forms of energy;

d) Conflict with existing energy standards;

e) Adversely affect existing energy resources; or

f) Result in substantial transportation energy use requirements with no efficient transportation alternatives.

The analysis of the significance of the Proposed Project with respect to these criteria is presented below. This analysis also applies to the other action alternatives, Alternatives 2 and 3, for which energy usage would be similar to that of the Proposed Project.

a) Result in substantially inefficient or wasteful consumption of energy.

Construction of the Project would require both direct and indirect uses of energy. Direct energy use would include the consumption of diesel fuel and gasoline for operation of construction vehicles and equipment, generators, and commuting vehicles for workers. Indirect energy use includes the energy required to make the materials and components used in construction. This includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing.

The consumption of energy as a result of Project construction would be irreversible. However, the highest level of consumption of energy would be temporary during the construction period, and would not continue during operations. Energy consumption required during operation and maintenance would be minimal, limited to consumption of diesel fuel and gasoline for commuting of workers and for maintenance vehicles. Energy consumption would increase again during decommissioning, but would be at a lower level than that for construction, and would also be temporary. Project activities would not result in long-term depletion of non-renewable energy resources, and would not permanently increase reliance on energy resources that are not renewable. Activities would not reduce or interrupt existing electrical or natural gas services due to insufficient supply, and are not expected to have a significant adverse effect on energy resources. Impacts from the Proposed Project on the consumption of energy would be less than significant.

b) Affect local and regional energy supplies to the point that additional capacity of those energy supplies would be required.

The impact of the Proposed Project on regional energy supplies would be beneficial. The purpose of the Project is to provide renewable energy resources to reduce reliance on non-renewable resources, and to contribute to meeting projected local peak demand electricity needs. Consequently, the Proposed Project would have a beneficial impact on local and regional energy supplies because it would ensure that current energy needs are met and that there is capacity to meet projected future energy needs. No adverse impact on local or regional energy supplies or capacity would result.

c) Adversely affect peak and base period demands for electricity and other forms of energy.

The Proposed Project would generate electrical energy which would be provided to the grid during peak and base periods. Therefore, the impact of the Project on peak and base period electrical demand would be beneficial. Because electricity for construction of the Project would be provided by generators, the Project would not be a source of electricity demand during peak periods, and there would be no adverse impact.

d) Conflict with existing energy standards.

Energy standards applicable to the Project are discussed in Sections 1.3.1 and 1.3.2, and include:

- Executive Order 13783 (March 28, 2017) and Secretary's Order 3349 (March 29, 2017) establishes policy to promote clean and safe development of the energy resources within the United States.
- Executive Order 13807 (August 15, 2017) and Secretary's Order 3355 (August 31, 2017) established policy to prioritize infrastructure projects and streamline the environmental review process.

- Section 211 of the Energy Policy Act of 2005 established a goal for the Department of the Interior to approve non-hydropower renewable energy projects on the public lands with at least 10,000 MWs of capacity by 2015. To achieve and exceed this goal, the BLM has now authorized over 17,000 MWs of non-hydropower renewable energy projects. The BLM continues to prioritize renewable energy development on public lands.
- Desert Quartzite is a covered project under Title 41 of Fixing America's Surface Transportation Act (FAST-41). FAST-41 established new coordination and oversight procedures for infrastructure projects being reviewed by Federal agencies. The intent of the act is to improve early coordination between government agencies, increase public transparency, and increase government accountability.
- SB X1-2, which increases the state's Renewable Portfolio Standard (RPS) to 33 percent by 2020, SB 350, which increases the state's RPS to 50 percent by 2030.
- Executive Order S-14-08 expanded this goal, mandating that "all retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020."

The impact of the Proposed Project would be beneficial, because assisting in meeting these standards is an objective of the Project. Operation of the Project would include ongoing maintenance activities that would require the use of trucks and equipment that use non-renewable fuels, but energy use for these purposes is expected to be minimal, requiring a negligible percentage of the overall energy used in the Project area. There would be no conflict with current energy conservation standards.

e) Adversely affect existing energy resources.

The Proposed Project would provide energy during peak hours, thus increasing the reliability of the local electrical subtransmission grid during peak demand times, and reducing the likelihood of interruptions in electrical distribution due to demand on the system. Consequently, the Proposed Project would not result in adverse impacts on energy resources.

f) Result in substantial transportation energy use requirements with no efficient transportation alternatives.

The Proposed Project construction would consume energy, in the form of diesel fuel and gasoline, during transportation of workers and materials to and from the Project site. This energy use would cease following the construction period. During operation and maintenance, transportation-related energy use would be limited to five round trips for commuting workers each day. The amount of fuel required for construction, operation, and maintenance activities would not be substantial, and energy use impacts would be less than significant.

5.4 Short-Term Uses and Long-Term Productivity

The BLM NEPA Handbook (H-1790-1 Sec. 9.2.9) and the NEPA Guidelines (40 CFR 1502.16) require a discussion of the relationship between short-term uses of the environment resulting from the Proposed Action or alternatives and the maintenance and enhancement of long-term productivity of the environment.

The environmental impacts described for the Proposed Action or alternatives in Chapter 4, *Environmental Consequences*, include short-term uses of the land area and resources during construction and throughout the 30-year life of the Project, and permanent, adverse impacts that would affect long-term productivity of the Project area following Project decommissioning. Temporary adverse impacts to resources such as air quality would cease following construction, and would not impact the long-term productivity of the environment. Other short-term uses, such as the loss of sensitive desert habitats, could adversely affect the long-term productivity of the area, even following decommissioning. Both APMs and agency-required mitigation measures are proposed to avoid, minimize, or mitigate activities that impact long term productivity.

The Proposed Action and other action alternatives would also provide an environmental benefit by generating electric power with a minimal increase in the use of non-renewable resources such as fossil fuels. Such a benefit could influence the long-term productivity of the environment.

5.5 Growth-Inducing Impacts

NEPA Guidelines (40 CFR 1502.16) and state CEQA Guidelines Section 15126.2 require a discussion of growth-inducing impacts that potentially would result from implementation of the Proposed Action or other action alternatives. State CEQA Guidelines Section 15126.2(d) requires a discussion of the ways in which a project could foster economic or population growth, or induce additional housing, either directly or indirectly in the surrounding environment. NEPA regulations also require consideration of the growth-inducing impacts of a project. As stated in 40 C.F.R. § 1508.8(b), "indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." Typically, a project's growth-inducing potential would be considered significant if it leads to population increases above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Significant growth-inducing impacts also could occur if a project provides infrastructure or service capacity that would accommodate growth levels beyond those permitted by local or regional plans and policies.

The Proposed Action or alternatives would not result in permanent increase in the local population, nor would they encourage growth and development through changes in land use designations or by providing utilities and/or access to previously undeveloped areas. No lands would be converted to residential or commercial use by the Project. The transmission lines associated with Project development would connect Project electrical output to the grid, but would not provide service to previously unserved areas. No new roadways would be constructed that would provide access to nearby areas, or that would open areas to residential or commercial development.

The new electrical generating capacity provided by the Project would not be considered to have significant growth-inducing impacts. Federal and California legal mandates to increase the use of renewable energy sources are not necessarily growth-related. In 2006, the California passed the California Global Warming Solutions Act (AB 32), which required the state to reduce emissions of CO_2 and other GHGs to 1990 emission levels (a 25 percent reduction) by 2020. SB 1368 was enacted in 2006, which prohibits California electric utilities from constructing power plants or entering into long-term purchase contracts with facilities that do not meet the GHG emissions standard. The California RPS legislation requires investor-owned utilities (IOUs),

publicly-owned utilities, and energy service providers to increase purchases of renewable energy such that at least 33 percent of retail sales are procured from renewable energy resources by December 31, 2020. The California mandates do not apply only to incremental power generation capacity that does not yet exist. The required shift in generation to renewables is not merely to power future growth – it also applies to the generating capacity needed to continue to serve the current level of demand on an ongoing basis. In addition, utility organizations are obligated to be able to meet the current and projected future electrical demand of their customers – having insufficient capacity is not an option. Because electrical demand is projected to increase in the coming years, the utilities need additional capacity to meet the projected demand, as well as to replace aging generating capacity that must be retired. This need for additional capacity is forecasted with or without implementation of the Project.

CHAPTER 6
COORDINATION, CONSULTATION, AND PUBLIC INVOLVEMENT

6.1 Introduction

Consistent with CEQA and NEPA requirements, public participation and agency consultation for this Project have been accomplished through issuance of public notices, public scoping meetings, and formal and informal consultation with agencies, stakeholders, landowners, and Native American Tribes. The consultation and coordination process was used to develop the range of alternatives, data sources, range of issues to be considered, and mitigation measures for the Draft PA/EIS/EIR. The Bureau of Land Management (BLM) is the NEPA Lead Agency, and the County of Riverside is the CEQA Lead Agency.

6.2 Agency Coordination

This section describes the Federal, state, and local agencies that were involved in preparation of the Draft PA/EIS/EIR, and/or were otherwise consulted. Table 6-1 lists specific individuals in the agencies who have been involved or consulted, to date.

Table 6-1. Agency Contact Summary

Affiliation	Name	Role
Bureau of Land Management	Brandon Anderson	Project Manager
Bureau of Land Management	Susie Greenhalgh	Acting Project Manager
Bureau of Land Management	John Dalton	NEPA Coordinator
Bureau of Land Management	Mark Massar	Biological Resources
Bureau of Land Management	Dani Ortiz	Biological Resources
Bureau of Land Management	George Kline	Cultural Resources
Bureau of Land Management	Tiffany Arend	Archaeologist
Bureau of Land Management	James Weigand	Soils, Water, Air, Vegetation
Riverside County	Larry Ross	Principal Planner
Riverside County	Russell Brady	Solar Project Lead
Riverside County Airport Land Use Commission	John J.G. Guerin	Principal Planner
U.S. Fish and Wildlife Service	Jody Fraser	Biological Resources
U.S. Fish and Wildlife Service	Peter Sanzenbacher	Biologist
California Department of Fish and Wildlife	Shankar Sharma	Senior Environmental Specialist
California Department of Fish and Wildlife	Magdalena Rodriguez	Biologist

6.2.1 U.S. Environmental Protection Agency

The BLM and County coordinated with U.S. Environmental Protection Agency (USEPA) during the PA/EIS/EIR scoping process. USEPA submitted comments in response to the March 6, 2015 NOI to prepare the Draft EIS regarding impacts to site hydrology, air quality, and biological resources. USEPA's concerns about site hydrology are addressed in Section 4.20, air resources

are addressed in Section 4.2; and impacts to biological resources are addressed in Sections 4.3 and 4.4. The BLM will continue to coordinate with USEPA on the DQSP throughout the environmental review process.

6.2.2 Department of Defense

The BLM works closely with the Department of Defense (DoD) through the DoD Siting Clearinghouse prior to approval of ROWs for renewable energy, utility, and communication facilities to ensure that these facilities would not interfere with military training routes or special use airspace (DoD 2014; DoD 2015). This coordination is separate from input sought and received from local military installations near the Project site regarding potential hazards to air navigation. Although the Clearinghouse has no regulatory authority in permitting energy infrastructure projects, coordination with the Clearinghouse serves the national security interests of the United States by protecting DoD-specific military capabilities such as the capacity to test and evaluate military weapons and sensor systems, monitor the skies for threats, and train personnel (DoD 2016).

6.2.3 U.S. Army Corps of Engineers

On May 8, 2015, the Applicant submitted a request to the Los Angeles District of the U.S. Army Corps of Engineers (USACE) for an approved Department of the Army Jurisdictional Determination (JD) for the Project site. Additional field data in support of the request were submitted to the USACE in October 2015. In a letter dated February 18, 2016, the USACE determined that waters of the United States do not occur on the Project site. The letter is attached to the Federal Jurisdictional Delineation provided in Appendix I.

6.3 Consultation

6.3.1 Endangered Species Act Section 7

Pursuant to Endangered Species Act Section 7 consultation requirements (16 U.S.C. §1531 et seq.), the BLM will initiate consultation by submitting a Biological Assessment (BA) to the USFWS. BLM held a meeting with the USFWS regarding mitigation of impacts to biological resources on March 17, 2015 at the BLM Palm Springs-South Coast Field Office. BLM will continue to consult with the USFWS, which is expected to issue a Biological Opinion (BO) that will specify required measures for protection of Federally-threatened and endangered species.

6.3.2 National Historic Preservation Act Section 106

Pursuant to National Historic Preservation Act Section 106 (54 U.S.C. §100101), the BLM has coordinated and consulted with potentially affected Indian tribes regarding the Project. Reasonable and good faith efforts undertaken by the BLM to consult and coordinate with the tribes for the Project to date have included written correspondence, meetings for the purposes of information and idea exchange, cultural resource-focused site visits, and responses to information requests. On March 18, 2015, the Advisory Council on Historic Properties received BLM's notification on the proposed Desert Quartzite Solar Project undertaking. On September 30, 2014 the BLM received agreement from the State Historic Preservation Officer (SHPO) on the Area of Potential Effect (APE) pursuant to 36 CFR 800.4.

BLM held a field visit with the Colorado River Indian Tribes on June 10, 2015, with three members and one elder in attendance. BLM sent a letter to the potentially affected Indian tribes on April 20, 2016, announcing the availability of the Class III Archaeological Survey Report. This letter also summarized measures that BLM would require of the Applicant to avoid effects to the significant values of any NRHP-eligible archaeological resources. BLM's determinations of eligibility and finding of effect will be forwarded to the California State Historic Preservation Officer (SHPO) seeking concurrence consistent with the agency's responsibilities under Section 106 of the NHPA.

6.3.3 Government-to-Government Tribal Consultation

BLM is participating in tribal consultation on a government-to-government level in accordance with several authorities, including NEPA; the NHPA; the American Indian Religious Freedom Act of 1978 (42 U.S.C. §1996), as amended; Executive Order 13007 (May 24, 1996), concerning Indian Sacred Sites; and Executive Order 13175 (November 6, 2000), concerning Consultation and Coordination with Indian Tribes. The consultation and discussions revealed concerns about the importance and sensitivity of cultural resources on and near the Project site, concerns about cumulative effects to cultural resources, and, further, that tribes attach significance to the broader cultural landscape. As a result of the tribal consultation process, many important cultural resources were identified in the Project area, and the Proposed Action and other action alternatives have been developed to avoid impacts to these resources.

The BLM invited Indian tribes to consult regarding the Project by letter dated August 21, 2014. The invitation was repeated in the April 20, 2016, letter that notified the tribes of the availability of the Class III Archaeological Survey Report. The invited tribes include:

1. Agua Caliente Band of Cahuilla Indians
2. Augustine Band of Cahuilla Indians
3. Cabazon Band of Mission Indians
4. Cahuilla Band of Mission Indians
5. Chemehuevi Indian Tribe
6. Cocopah Indian Tribe
7. Colorado River Indian Tribes
8. Fort Mojave Indian Tribe
9. Fort Yuma Quechan Tribe
10. Morongo Band of Mission Indians
11. Ramona Band of Mission Indians
12. San Manuel Band of Mission Indians
13. Soboba Band of Luiseno Indians
14. Torres-Martinez Desert Cahuilla Indians
15. Twentynine Palms Band of Mission Indians

On August 29, 2016, the Colorado River Indian Tribes responded to BLM's April 20, 2016 letter notifying the BLM of their intent to conduct additional tribal surveys. To determine the NRHP eligibility of three sites within the project, SRI completed a work plan to test for subsurface presence of archaeological data on seven thermal cobble features that were thought to be earth ovens. The plan was sent to consulting tribes on April 4, 2018 with a letter stating the purpose and intent of the work plan. Tribes were invited to participate in the test excavations, which were completed during the week of April 23, 2018. The Colorado River Indian Tribes responded to the additional testing on April 27, 2018 and provided a monitor to assist in the limited testing. On May 10, 2018, the Twentynine Palms Band of Mission Indians requested the BLM provide copies of the Testing Results when complete. On April 24, 2018, the Cahuilla Band of Indians indicated they do not have knowledge of cultural resources or sites within the Project site, but wish to continue government-to-government consultation. On April 10, 2018, the San Manuel Band of Mission Indians indicated they will not be requesting consulting party status or participating in the environmental review of the project.

6.3.4 County Tribal Consultation

Although formal consultation under Assembly Bill 52 (AB 52) is not required, the County did consult with interested Tribes. Notices regarding the Project were mailed to 11 Tribes who had requested notifications regarding projects located within their Traditional Use Areas. No responses were received from the Cabazon Band of Mission Indians, the Cahuilla Band of Indians, Ramona Band, Rincon Band of Luiseno Indians, Colorado River Indian Tribes, Morongo Band or the Torres Martinez Band of Cahuilla Indians. A response was received dated September 12, 2016 from the Pechanga Band of Luiseno Indians deferring to closer tribes. Three Tribes requested consultation.

The Twenty-Nine Palms Band responded in a letter dated November 18, 2016 and expressed their concern for the project being located in a culturally sensitive area. In a letter dated December 7, 2016 the Tribe requested the opportunity to review the EIR. In a letter dated November 6, 2017, the Tribe requested that the sites identified as eligible or possibly eligible for the NRHP and CRHR be avoided or, if avoidance was not possible, that the Tribe be consulted prior to archaeological data recovery or other mitigation treatment. The November 6, 2017 letter also requested additional monitoring during earthmoving activities in the Orita and Rositas soil series, the Native American Monitor(s) from the Twenty-Nine Palms Band of Mission Indians be present during any ground disturbance, and that consultation continue throughout the life of the Project.

The Soboba Band of Luiseno Indians requested consultation in a letter dated October 10, 2016. Meetings were held on October 25, 2016 and December 5, 2016. The conditions of approval for the project were provided to the Tribe on December 2, 2016. A response was received via email on December 5, 2016 concurring with the conditions and formally concluding AB52 consultation.

The Agua Caliente Band of Cahuilla Indians requested consultation in a letter dated September 16, 2016. This project was discussed on December 2, 2016, April 5, 2017 and May 5, 2017. The conditions of approval for the project were provided to the Tribe on December 2, 2016. A formal conclusion letter was received from the Tribe dated June 08, 2017.

6.4 Public Involvement

The BLM and County solicited internal and external input on the issues, impacts, and potential alternatives to be addressed in the Draft PA/EIS/EIR for the Project, as well as the extent to which those issues and impacts would be analyzed in the document. This process is called "scoping" (40 CFR §1501.7). Internal input was provided by the BLM, Riverside County, and cooperating agencies as an interdisciplinary process, to help define issues, alternatives, and data needs. External scoping involved notification and opportunities for feedback from other agencies, organizations, tribes, local governments, and the public. Formal public scoping began following publication of a NOI under NEPA and release of a NOP under CEQA.

The NOI for the Proposed Action was published in the Federal Register on March 6, 2015 (80 FR 12195). The NOP was issued on March 13, 2015. Copies of the NOP were provided to the Office of Planning and Research (State Clearinghouse) for issuance to state agencies. One hundred and ninety copies of the NOP were distributed to Federal, state, and local agencies, responsible and trustee agencies, local governments, private organizations, Native American tribes, and other interested parties.

Both the NOI and the NOP announced the dates, times, and locations of public scoping meetings in Parker, Arizona on March 23, 2015, and in Blythe, California, on March 24, 2015. The purpose of the meetings was to inform the public about the Project; describe the purpose and need of the Project; provide information regarding the environmental review process; and gather public input regarding the scope and content of the Draft PA/EIS/EIR. The BLM, County, and Applicant presented information about the Project, alternatives, environmental review process, and potential impacts. Following the presentations, members of the public were invited to make verbal comments. A total of six individuals made public comments at the meetings. At the conclusion of the public comments, staff members from the agencies and the Applicant were available to answer questions and gather input. In addition to being published in the NOI and NOP, information regarding the public meetings was published in the Parker Pioneer, Desert Sun, and Palo Verde Times on March 18, 2015. The meetings were also were announced on the BLM website for the project, at http://www.blm.gov/ca/st/en/fo/palmsprings/Desert_Quartzite.html. Notice of the meetings was also mailed to 190 recipients, which included agencies, Native American tribes, organizations, and interested individuals.

The comment period for the NOI and NOP began on March 6, 2015, and ended on April 13, 2015. A total of nine written comment letters were submitted to BLM, 13 written comment letters were submitted to the County, and four comments letters were jointly submitted to both agencies. Comments received during the scoping process are provided in Appendix H, *Public Scoping Report*.

6.5 List of Preparers

A list of persons responsible for the preparation of various sections of the Draft PA/EIS/EIR or preparation of significant background materials, or who participated to a significant degree in preparing the Draft PA/EIS/EIR, is presented below.

Bureau of Land Management—NEPA Lead Agency

- Brandon Anderson, Project Manager/Realty Specialist

- Susie Greenhalgh, Project Manager
- John Dalton, NEPA Specialist
- George Kline, Field Office Archaeologist
- Mark Massar, Wildlife Biologist
- Noel Ludwig, Hydrologist
- Kevin Doran, Natural Resources Specialist
- Jeff Johnston, Geologist
- JoAnn Schiffer-Burdett, Outdoor Recreation Planner
- James Weigand, Ecologist

County of Riverside—CEQA Lead Agency

- Larry Ross, Principal Planner
- Russell Brady, Solar Projects Lead

Consultants responsible for the technical analysis and document production are listed in Table 6-2, along with their qualifications.

Table 6-2. List of Consultants

Name	Qualifications	Role
TRC – Project Management Consultant and Technical Reviewer		
Richard Burke, CEP	B.S., M.S., Technology and Human Affairs, 40 years' experience	Project Manager
Chris Moore, AICP	B.A., M.S., Community and Regional Planning, 18 years' experience	Assistant Project Manager, Technical Review – Spill Prevention, Control, and Countermeasures Plan
Cara Snellen	B.S., M.S., Biology, 7 years, experience	Assistant Project Manager, 508 Compliance
Tim Henggeler	B.S., Chemical Engineering, 12 years' experience	Technical Review – Air Quality, Greenhouse Gas
Taylor VanHouten	B.S., Meteorology, 8 years' experience	Technical Review – Noise
Brian Dempsey, PE, PTOE	B.C.E., Civil Engineering, 28 years' experience	Technical Review – Traffic Impact Analysis
Erin Degutis, RLA, AICP, LEED AP	B.S., M.L.A., Landscape Architecture, 15 years' experience	Technical Review – Visual Impact Analysis
Susan Underbrink, RPA	B.A., M.A., Anthropology, 20 years' experience	Technical Review – Worker Environmental Awareness Program, Scoping
David Clark	B.S., M.S., Environmental Biology, 38 years' experience	Technical Review – Environmental Justice, Social and Economic Setting, Visual Resources
Karin Greenacre, PE	B.S., M.S., Chemical Engineering, 25 years' experience	Technical Review – Air Quality, Greenhouse Gas
Marlene Stephens	B.A., English, 11 years' experience	508 Compliance

Table 6-2. List of Consultants

Name	Qualifications	Role
Joshua Taylor	B.S., Environmental Science, 13 years' experience	Technical Review - Utilities and Public Services
AECOM – PA/EIS/EIR Contractor		
Robert Dover, PG, PMP	B.S., M.S., Geology, 30 years' experience	Project Manager, Geology/Soils, Greenhouse Gas, Hazardous Materials, Mineral Resources, Transportation, Utilities, Wildland Fire
Erika Grace	B.S., Biological Sciences, M.S., Environmental Toxicology, 10 years' experience	Project Coordinator
Anne Ferguson	B.S., Natural Resource Recreation and Tourism, M.S., Environmental Sustainability, 14 years' experience	Air Quality, Lands and Realty, Noise, Recreation, Special Designations
Lyndon Quon	B.A., Ecology, 26 years' experience	Vegetation, Wildlife
Mark Roll	B.S., Biology, Masters, Environmental Law and Policy, 10 years' experience	Vegetation, Wildlife
Matt Tennyson, RPA	B.A., Archaeology, M.A., Anthropology, 16 years' experience	Cultural Resources
Shannon Foglia	B.A., Anthropology, M.A., Archaeology, 7 years' experience	Cultural Resources
Lauren Trimble	B.A., M.A., Anthropology, 3 years' experience	Cultural Resources
Stev Weidlich	B.A., M.S., Anthropology, 8 years' experience	Socioeconomics and Environmental Justice
Susan Provenzano	B.A., Earth and Space Sciences, M.S., Environmental Sciences, M.S., Marine Environmental Sciences, 35 years' experience	Environmental Justice
Steve Ensley	B.S., Environmental Conservation, 12 years' experience	Geographic Information Systems
Peter Augello	B.A., Geography, M.S., Cartography/GIS, 11 years' experience	Geographic Information Systems
Jason Paukovits	B.A., Psychology, B.S., Environmental Resource Management, Master of Environmental Management, Master of Public Policy, 14 years' experience	Air Quality
Carmen Caceres-Schnell, PG	B.S., M.S., Geology, 18 years' experience	Water Resources

Appendix A

APPENDIX A
FIGURES

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Desert Quartzite Solar Project EIS/EIR

Poston
Midland
Colorado River Indian Reservation
Palen Lake
Quartzsite
Ford Dry Lake
East Blythe
Blythe
Ehrenberg
Project Location
Ripley
Palo Verde
RIVERSIDE COUNTY
IMPERIAL COUNTY
Colorado River
Cibola National Wildlife Refuge
Cibola
Yuma Test Range
LA PAZ COUNTY
YUMA COUNTY
78
Cibola Lake
Chocolate Mountain Aerial Gunnery Range
CALIFORNIA
ARIZONA
Imperial National Wildlife Refuge

Legend

Right-of-Way Application Boundary

Surface Management

- BIA
- BLM
- BOR
- County/Local
- DOD
- NPS
- State
- USFWS
- Other/Private

Boundaries

- State Boundary
- County Boundary
- Urban Area

Roads

- Interstate
- US Highway
- State Highway
- Other Roads

Figure 1-1
Regional Context

0 5 10 Miles
0 5 10 Kilometers
N

Date 12/22/2015
Sources AECOM, BLM, ESRI, First Solar, US Census, [illegible]



12/22/2015

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Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Colorado River Substation
- Gen-Tie Line

Surface Management

- BLM
- State

Boundaries

- State Boundary
- County Boundary
- Urban Area

Roads

- Interstate
- US Highway
- State Highway
- Other Roads

Mesa Dr
Black Creek Rd
Gas Line Rd
Blythe Airport
Blythe
N Lovekin Blvd
Mesa Dr
S Defrain Blvd
22nd Ave
Ripley
28th Ave
Wileys Well Rd
Bradshaw Trl
S Neighbours Blvd
Colorado River
CALIFORNIA
ARIZONA
Palo Verde
RIVERSIDE COUNTY
IMPERIAL COUNTY

Figure 2-1
Project Location

0 1 2 Miles
0 2 4 Kilometers
N

Date 1/19/2016
Sources AECOM, BLM, ESRI, First Solar, US Census, USGS



1/19/2016

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Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Substation
- Gen-Tie Line
- Construction Staging Area
- Buildings
- Proposed Met Station
- Proposed Well Location
- Access Road
- Site Access Route
- Typical PV Array

Proposed Utilities

- Internal Power Collection Line
- Proposed Telecommunications Line
- Proposed Power Supply Lines

Surface Management

- BLM
- Other/Private
- Private

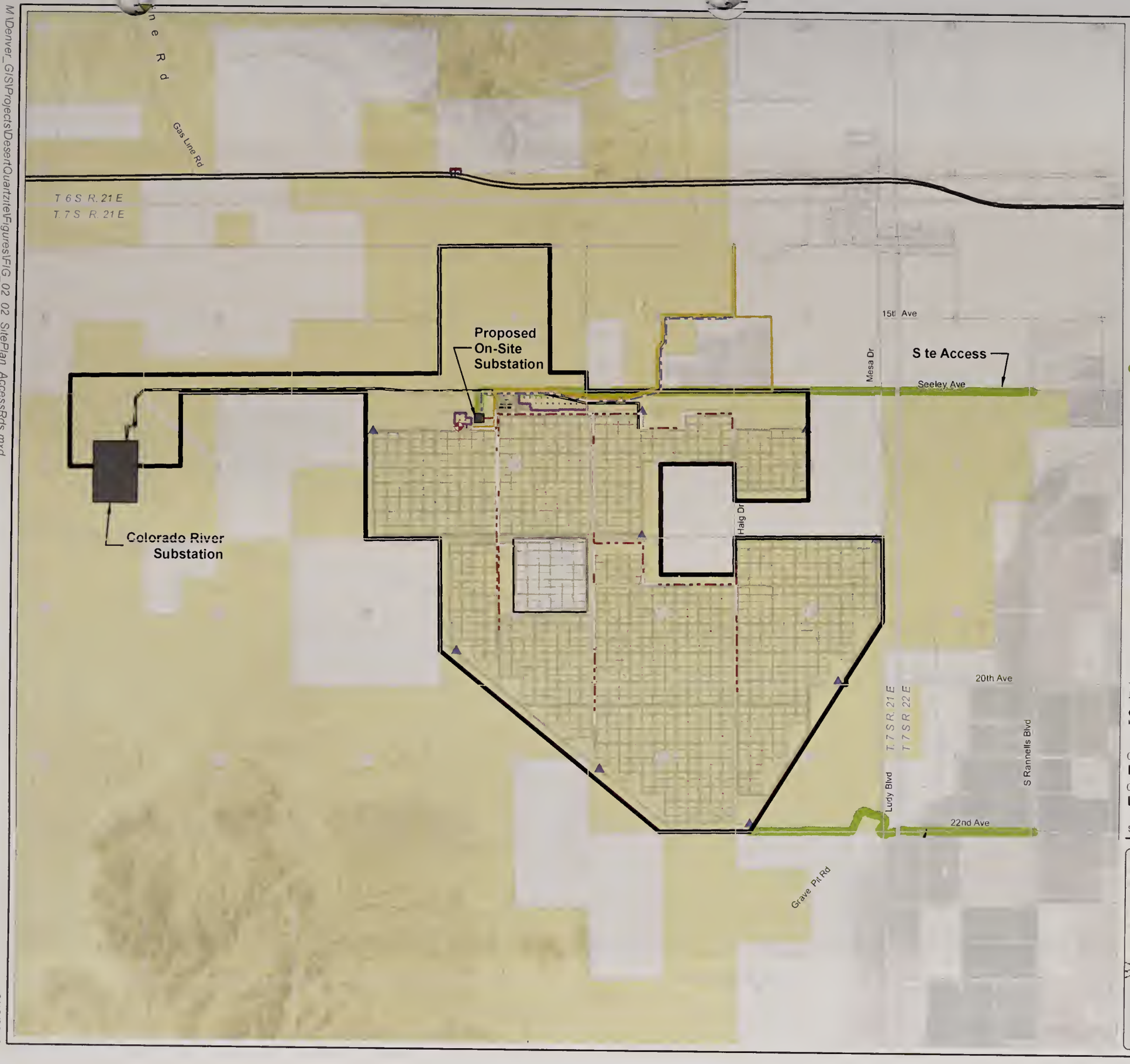


Figure 2-2
Site Plan

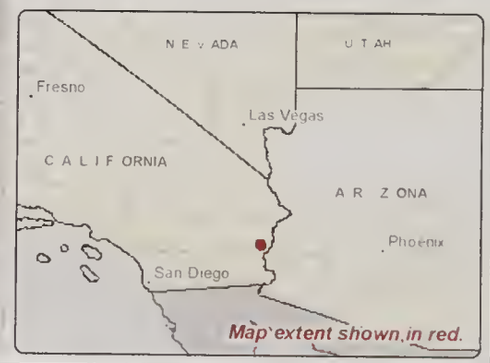
0 2,000 4,000 Feet

0 0 5 1 Miles

N

Date 3/13/2018

Sources: AECOM, BLM, ESRI, First Solar, US Census, USGS



3/13/2018

E:\GIS\Projects\DesertQuartzite\Figures\FIG_02_03_ArrayPhoto.mxd

Desert Quartzite
Solar Project EIS/EIR



Figure 2-3
Photograph of Typical
Solar Array

Date: 3/3/2016
Sources: First Solar



3/3/2016

E:\GIS\Projects\DesertQuartzite\Figures\FIG_02_04_ArrayLayout.mxd

Desert Quartzite Solar Project EIS/EIR

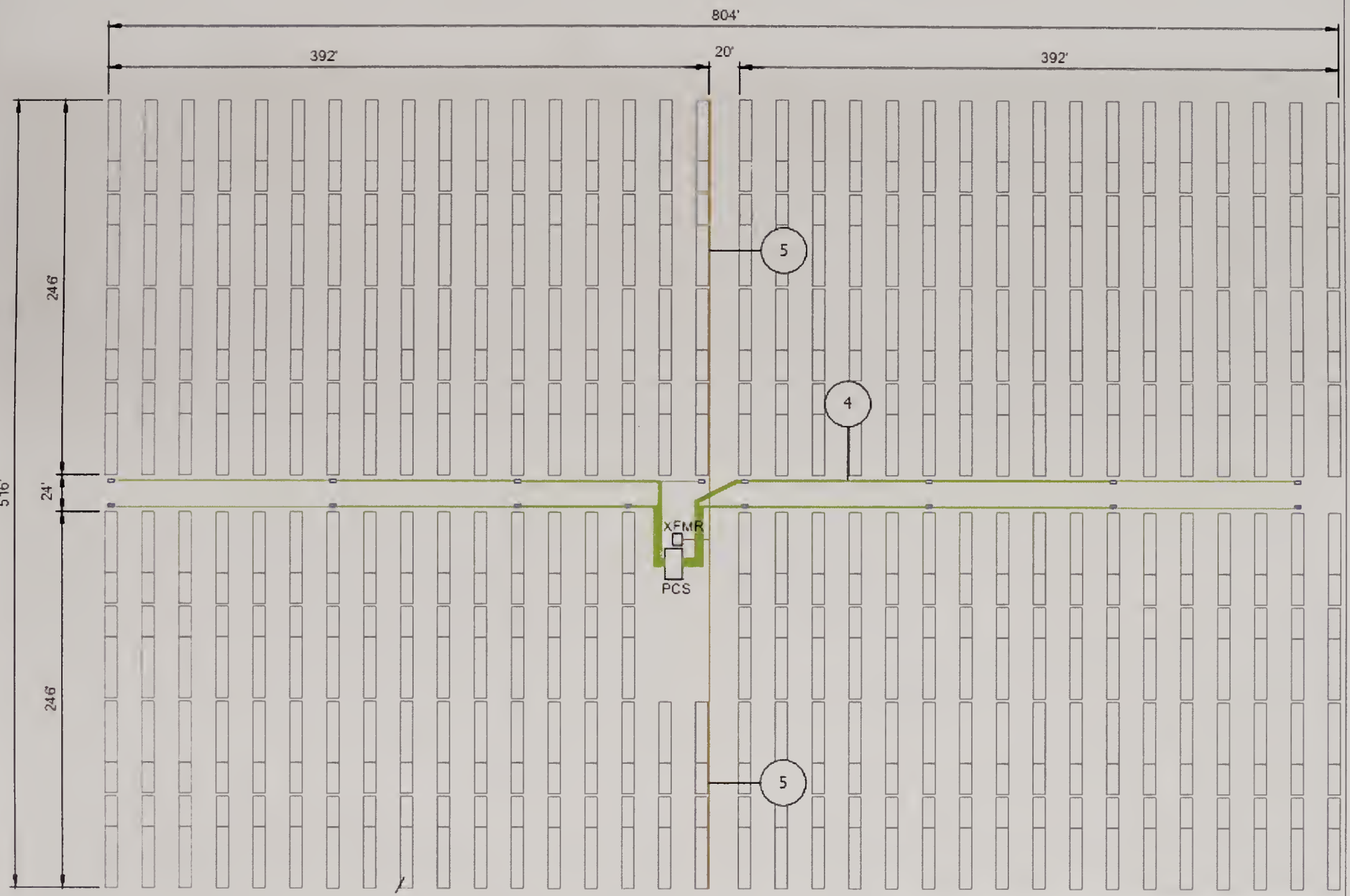


Figure 2-4
Layout of Typical Solar Array

Date 3/3/2016
Sources: First Solar



3/3/2016

E:\GIS\Projects\DesertQuartzite\Figures\FIG_02_05_PowerConversionPhoto.mxd

Desert Quartzite
Solar Project EIS/EIR



Figure 2-5
Photograph of Typical
Power Conversion Station

Date 3/3/2016
Sources First Solar



3/3/2016

E:\GIS\Projects\DesertQuartzite\EIFigures\FIG_02_06_SwitchgearPhoto.mxd

Desert Quartzite
Solar Project EIS/EIR



Figure 2-6
Photograph of Typical
PV Combining Switchgear

Date 3/3/2016
Sources First Solar



3/3/2016

E:\GIS\Projects\DesertQuartzite\Figures\FIG_02_07_Topo.mxd

Desert Quartzite Solar Project EIS/EIR

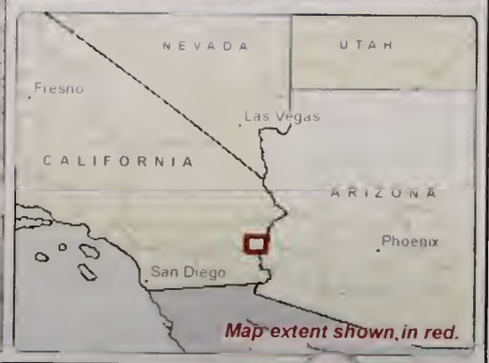
Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Substation

Figure 2-7
Topographic Map of Site Vicinity

0 2 4 Miles
0 2 4 Kilometers
N

Date 3/14/2016
Sources AECOM First Solar USGS



3/14/2016

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Limit of Cut/Fill
- Substation
- Drainage Flow Direction

Surface Management

- BLM
- Other/Private

T. 6 S. R. 21 E
T. 7 S. R. 21 E

Gas Line Rd
15th Ave
Mesa Dr
Haig Dr
Ludy Blvd
Gravel Pit Rd
T. 7 S. R. 21 E
T. 7 S. R. 22 E

Colorado River Substation

Figure 2-8
Project Site Topography and Grading Plan

0 2,000 4,000 Feet
0 0.5 1 Miles
N

Date 2/13/2017
Sources AECOM, BLM, ESRI, First Solar, US Census, USGS



E:\GIS\Projects\DesertQuartzite\Figures\FIG_02_08_TopoGradingPlan.mxd

2/13/2017

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_02_09_Alt2_ResourceAvoidance.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Resource Avoidance Alternative Footprint
- Alternative 2 Gen-Tie Line
- Boundary of Private Land Parcel
- Substation
- Existing Transmission ROW
- Proposed Telecommunications Line
- Groundwater Production Well

Surface Management

- BLM
- Other/Private

Gas Line Rd

10

T 6S R 21E

T 7S R 21E

15th Ave

Mesa Dr

Haig Dr

On-Site Substation

Colorado River Substation

Ludy Blvd

T 7S R 21E

T 7S R 22E

Gravel Pit Rd

Figure 2-9
Alternative 2 - Resource Avoidance

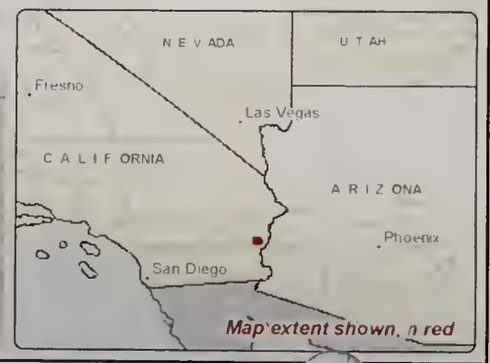
0 2,000 4,000 Feet

0 0.5 1 Miles

N

Date: 6/8/2018

Sources: AECOM, BLM, ESRI, First Solar, US Census, USGS



6/8/2018

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Reduced Project Alternative Footprint
- Alternative 3 Gen-Tie Line
- Boundary of Private Land Parcel
- Substation
- Existing Transmission ROW
- Proposed Telecommunications Line
- Groundwater Production Well

Surface Management

- BLM
- Other/Private

Gas Line Rd

10

T 6 S R 21 E
T 7 S R 21 E

15th Ave

Mesa Dr

Haig Dr

On-Site Substation

Colorado River Substation

Ludy Blvd

T 7 S R 21 E
T 7 S R 22 E

Gravel Pit Rd

Figure 2-10
Alternative 3 - Reduced Project

0 2,000 4,000 Feet

0 0.5 1 Miles

N

Date 6/8/2018

Sources AECOM, BLM, ESRI, First Solar, US Census, USGS



M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_02_10_Alt3_ReducedProject.mxd

6/8/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_03_02_01_WindRose.mxd

Desert Quartzite
Solar Project EIS/EIR

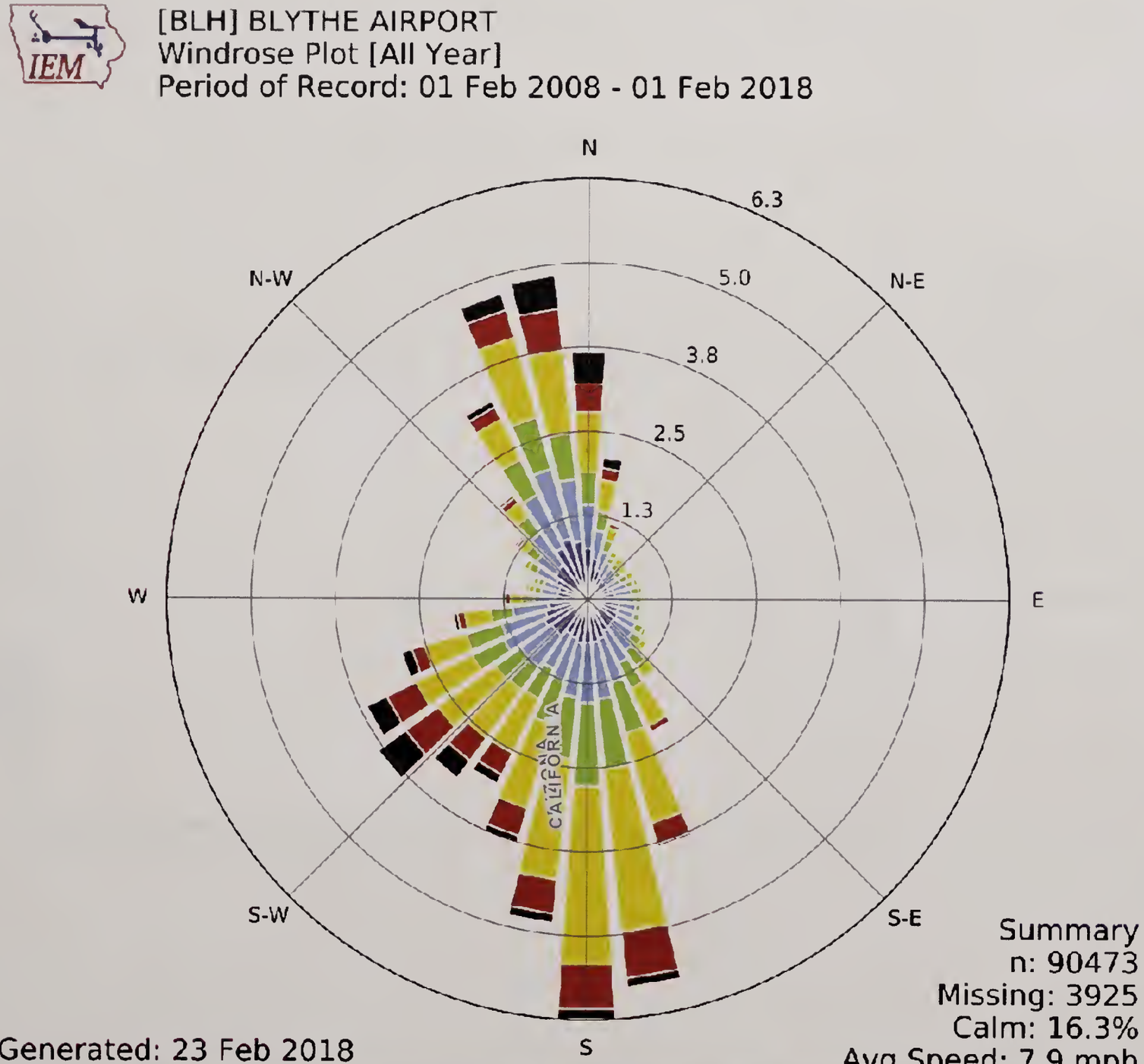


Figure 3.2-1
Blythe Airport
Wind Rose Diagram

Date 3/13/2018
Sources: AECOM ESRI IEM US Census



3/13/2018

E:\GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_03_01_BioSurveyArea.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- 1-Mile Site Boundary Buffer

10

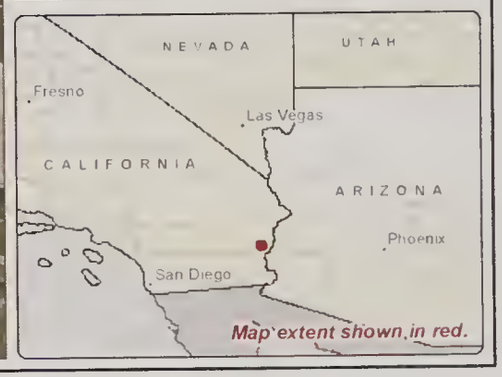
Figure 3.3-1
Biological Resources Study Area

0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date 4/18/2016
Sources AECOM, BLM, CalTrans, First Solar, US Census



4/18/2016

M:\Denver_GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_03_02_VegAlliances.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Sand Corridor

Vegetation/Cover Types

- Anthropogenic Areas of Little or No Vegetation
- Built-up & Urban Disturbance
- Chorizanthe rigida - Geraea canescens Desert Pavement Sparsely Vegetated
- Larrea tridentata
- Larrea tridentata - Ambrosia dumosa
- Parkinsonia florida - Olneya tesota
- Pleuraphis rigida
- Woody Agriculture (orchards, vineyards)

Figure 3.3-2
Vegetation Alliances and Cover Types

0 0.5 1 Miles
0 1 2 Kilometers
N

Date: 4/27/2018
Sources: AECOM, BLM, CalTrans, US Census



4/27/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\BioVFIG_03_03_03_SSPlants.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Special Status Plant Species

- Abram's Prostrate Spurge
- Utah Vine Milkweed
- Harwoods Eriastrum
- Ribbed Crypthantha
- Desert Unicorn Plant
- Harwoods Milkvetch

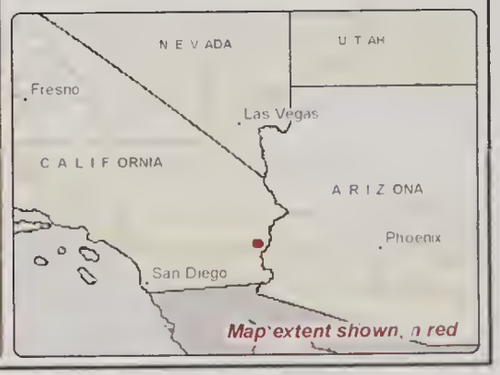
Plant Density

- 1 - 10
- 11 - 100
- 101 - 1,000
- 1,001 - 5,000
- 5,001 - 12,200

Figure 3.3-3
Special Status Plant Species Locations

0 0.5 1 Miles
0 2,000 4,000 Feet
N

Date 4/26/2018
Sources AECOM BLM CalTrans First Solar US Census



4/26/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\BioFIG_03_03_04_HarwoodsMilkvetch.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Harwoods Milkvetch

Count

- 1 - 50
- 51 - 100
- 101 - 300
- 301 - 500
- 501 - 975

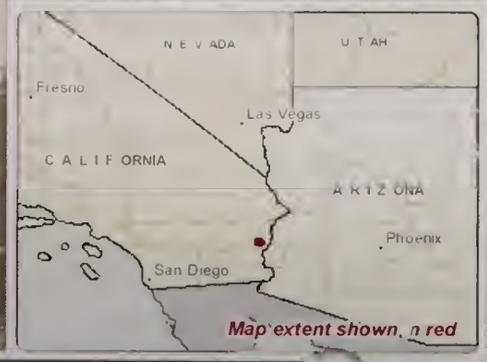
Figure 3.3-4
Harwoods Milkvetch Locations

0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date 4/27/2018
Sources AECOM, BLM, CalTrans, First Solar, US Census



4/27/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\BioI\FIG_03_03_05_AbramsSpurge.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Abram's Prostrate Spurge

Count

- 1 - 5
- 6 - 10
- 11 - 20
- 21 - 40
- Abram's Spurge Population

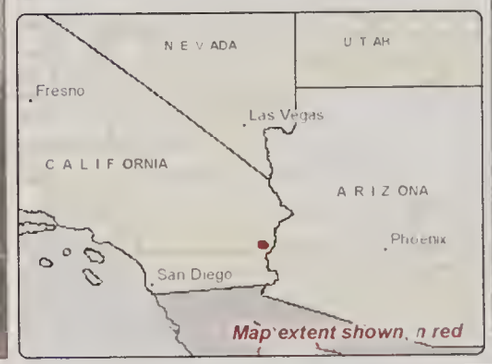
Figure 3.3-5
Abram's Spurge Locations

0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date 4/27/2018
Sources AECOM BLM CalTrans First Solar US Census



4/27/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\BioFIG_03_03_06_UtahVineMilkweed.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Utah Vine Milkweed

Count

- 1

Figure 3.3-6
Utah Vine Milkweed Locations

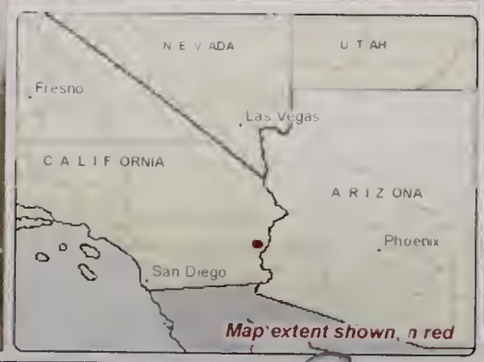
0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date: 4/27/2018

Sources: AECOM, BLM, CalTrans, First Solar, US Census



4/27/2018

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Ribbed Crypthantha

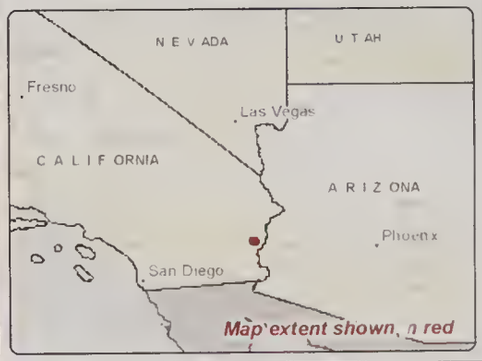
Count

- 1 - 10
- 11 - 100
- 101 - 1,000
- 1,001 - 5,000
- 5,001 - 12,200

Figure 3.3-7
Ribbed Cryptantha Locations

0 0.5 1 Miles
0 2,000 4,000 Feet
N

Date: 4/27/2018
Sources: AECOM, BLM, CalTrans, First Solar, US Census



M:\Denver_GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_03_07_RibbedCryptantha.mxd

4/27/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_03_03_08_HarwoodsErastrum.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Harwoods Eriastrum

- Occupied Habitat
- DRECP Species Distribution Model
- 2010/2011 CNDDB Data

2013 Survey Results Count

- 1 - 5
- 6 - 20
- 21 - 50
- 51 - 100
- 101 - 171

2017 Survey Results Count

- 1-5
- 51-100

Vegetation/Cover Types

- Anthropogenic Areas of Little or No Vegetation
- Built-up & Urban Disturbance
- Chorizanthe rigida - Geraea canescens Desert Pavement Sparsely Vegetated
- Larrea tridentata
- Larrea tridentata - Ambrosia dumosa
- Parkinsonia florida - Olneya tesota
- Pleuraphis rigida
- Woody Agriculture (orchards, vineyards)

Figure 3.3-8
Harwoods Eriastrum Locations

0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date 4/27/2018

Sources AECOM, BLM, DRECP, CalTrans, First Solar, US Census



4/27/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_03_09_DesertUnicornPlant.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Desert Unicorn Plant

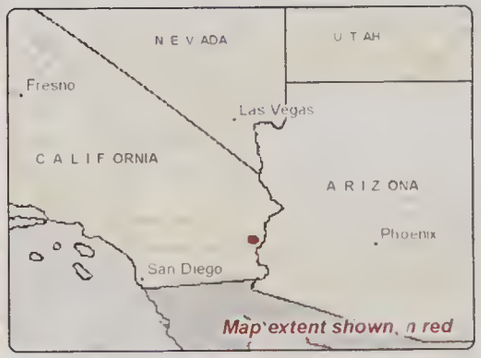
Count

- 1 - 5
- 6 - 10
- 11 - 15
- 16 - 25

Figure 3.3-9
Desert Unicorn Plant Locations

0 0.5 1 Miles
0 2,000 4,000 Feet
N

Date 4/27/2018
Sources AECOM BLM CalTrans First Solar US Census



4/27/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_03_10_SaharaMustard.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

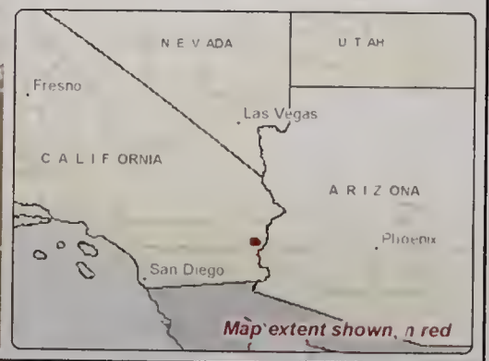
- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Sahara Mustard
- Sand Dune

BRTOU033
BRTOU034
BRTOU035
BRTOU032
BRTOU005
BRTOU006
BRTOU036
BRTOU001
BRTOU012
BRTOU015
BRTOU011
BRTOU002
BRTOU004
BRTOU003
BRTOU019
BRTOU014
BRTOU013
BRTOU018
BRTOU017
MAX2134
BRTOU020
BRTOU016
BRTOU021
BRTOU022
BRTOU008
BRTOU030
BRTOU009
BRTOU010
BRTOU023
BRTOU029
BRTOU024
BRTOU031
BRTOU028
BRTOU025
BRTOU027
BRTOU026

Figure 3.3-10
Sahara Mustard Distribution

0 0.5 1 Miles
0 2,000 4,000 Feet
N

Date 4/27/2018
Sources AECOM, BLM, CalTrans, First Solar, US Census



4/27/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_04_01_DesertTortoiseSign.mxd

4/24/2018

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Desert Tortoise Sign

- Tortoise Carcass
- Tortoise Tracks
- Incidental Live Observation

Figure 3.4-1
Desert Tortoise Sign

0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date 4/24/2018

Sources AECOM, BLM, CalTrans, First Solar, US Census



E:\GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_04_02_USGSDesertTortoiseHabitat.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary

USGS Desert Tortoise Modeled Habitat

Predicted Habitat Potential - Model Score

- 0.5
- 0.7
- 0.9

Poston
Midland
Palen Lake
Ford Dry Lake
Quartzsite
East Blythe
Blythe
Ehrenberg
Ripley
Palo Verde
Colorado River
RIVERSIDE COUNTY
IMPERIAL COUNTY
Cibola
CALIFORNIA
ARIZONA
LA PAZ COUNTY
YUMA COUNTY

Figure 3.4-2
USGS Desert Tortoise Habitat Model

0 5 10 Miles
0 5 10 Kilometers
N

Date: 1/12/2016
Sources: AECOM, BLM, CalTrans, First Solar, U.S. Census, USGS



1/12/2016

M:\Denver_GIS\Projects\DesertQuartzite\Figures\Biol\FIG_03_04_03_FringeToedLizardHabitat.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Fringe-Toed Lizard Habitat

- DRECP Species Distribution Model
- Occupied Habitat

Density

- 1 - 2
- 3 - 4
- 5 - 6
- 7 - 9
- 10 - 12

Vegetation/Cover Types

- Anthropogenic Areas of Little or No Vegetation
- Built-up & Urban Disturbance
- Chorizanthe rigida - Geraea canescens Desert Pavement Sparsely Vegetated
- Larrea tridentata
- Larrea tridentata - Ambrosia dumosa
- Parkinsonia florida - Olneya tesota
- Pleuraphis rigida
- Woody Agriculture (orchards, vineyards)

Figure 3.4-3
Mojave Fringe-Toed Lizard Locations

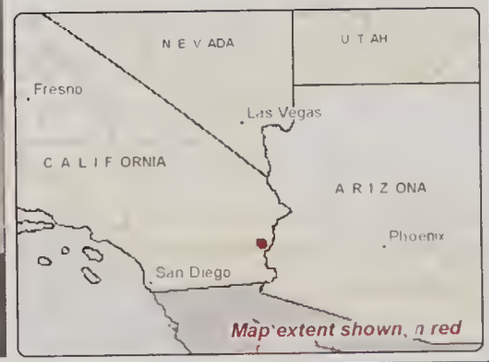
0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date 4/27/2018

Sources AECOM, BLM, CalTrans, First Solar, US Census



4/27/2018

E:\GIS\Projects\DesertQuartzite\Figures\BioFIG_03_04_04_BurrowingOwlHabitat.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Burrowing Owl Habitat

Burrows & Observations

- 1 - Excellent (BUOW present)
- 2 - Good (Usable, fressh sign, no BUOW)
- 3- Fair (Usable, old sign, no BUOW)
- Incidental Observation

Habitat Suitablity

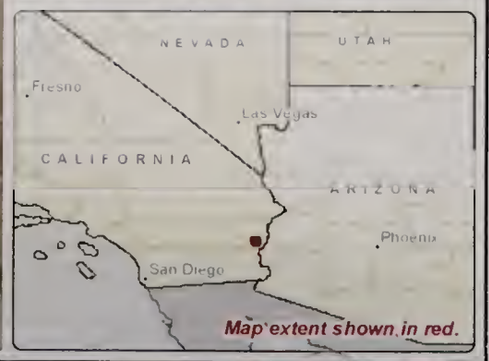
- Suitable
- Unsuitable

10
Mesa Dr
15th Ave
Seeley Ave
20th Ave
Ludy Blvd
22nd Ave
Gravel Pit Rd
24th Ave

Figure 3.4-4
Burrowing Owl Habitat, Observations, and Burrows

0 0.5 1 Miles
0 3,000 6,000 Feet
N

Date 1/25/2016
Sources AECOM, BLM, CalTrans, First Solar, US Census



1/25/2016

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Right-of-Way Application Boundary 10-Mile Buffer
- Boundary of Private Land Parcel

Golden Eagle Observation Points & Sightings

- Observation Point 2013-2014
- Observation Point 2014-2015
- Sighting 2014
- Nest from DRECP Data Basin Website

Ford Dry Lake

Blythe

East Blythe

Ripley

Palo Verde

ARIZONA

CALIFORNIA

Colorado River

RIVERSIDE COUNTY

IMPERIAL COUNTY

LA PAZ COUNTY

95

10

78

Figure 3.4-5
Golden Eagle Habitat and Observations

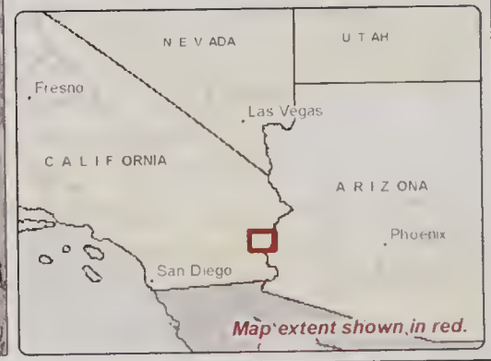
0 2 4 Miles

0 4 8 Kilometers

N

Date 4/27/2018

Sources AECOM BLM CalTrans First Solar US Census



M:\Denver_GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_04_05_GoldenEagleHabitat.mxd

4/27/2018

E:\GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_04_06_MigratoryBirdSurveys.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Migratory Bird Surveys

- Avian Migration Survey Points
- Transect Line



Figure 3.4-6
Migratory Bird Survey Locations & Avian Line Transects

0 0.5 1 Miles

0 3,000 6,000 Feet

N

Date 1/25/2016

Sources AECOM, BLM, CalTrans, First Solar, US Census



1/25/2016

E:\GIS\Projects\DesertQuartzite\Figures\BioFIG_03_04_07_RaptorRavenNests.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Raptor Nests

Nest Type

- Cliff / Rock outcrop
- Power line support structure
- Tree

Ford Dry Lake

10

78

Ripley

Figure 3.4-7
Raptor and Raven Nest Locations

0 1 2 Miles

0 2 4 Kilometers

N

Date 4/12/2016

Sources AECOM BLM CalTrans First Solar US Census



1/25/2016

E:\GIS\Projects\DesertQuartzite\Figures\BioFIG_03_04_08_KitFoxBurrows.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Kit Fox Burrow

10

Mesa Dr

15th Av

Seeley A

1 Adult

Pair of Adults

1 Adult

1 Adult

Breeding Pair and 3 Juveniles

1 Adult

20th Av

Ludy Blvd

22nd

Gravel Pit Rd

Figure 3.4-8
Active Kit Fox Burrows

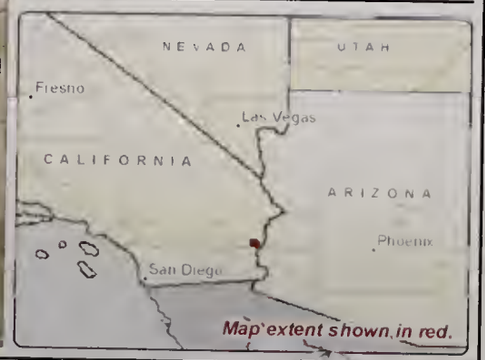
0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date 1/25/2016

Sources AECOM BLM CalTrans First Solar US Census



1/25/2016

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Bat Monitoring Location

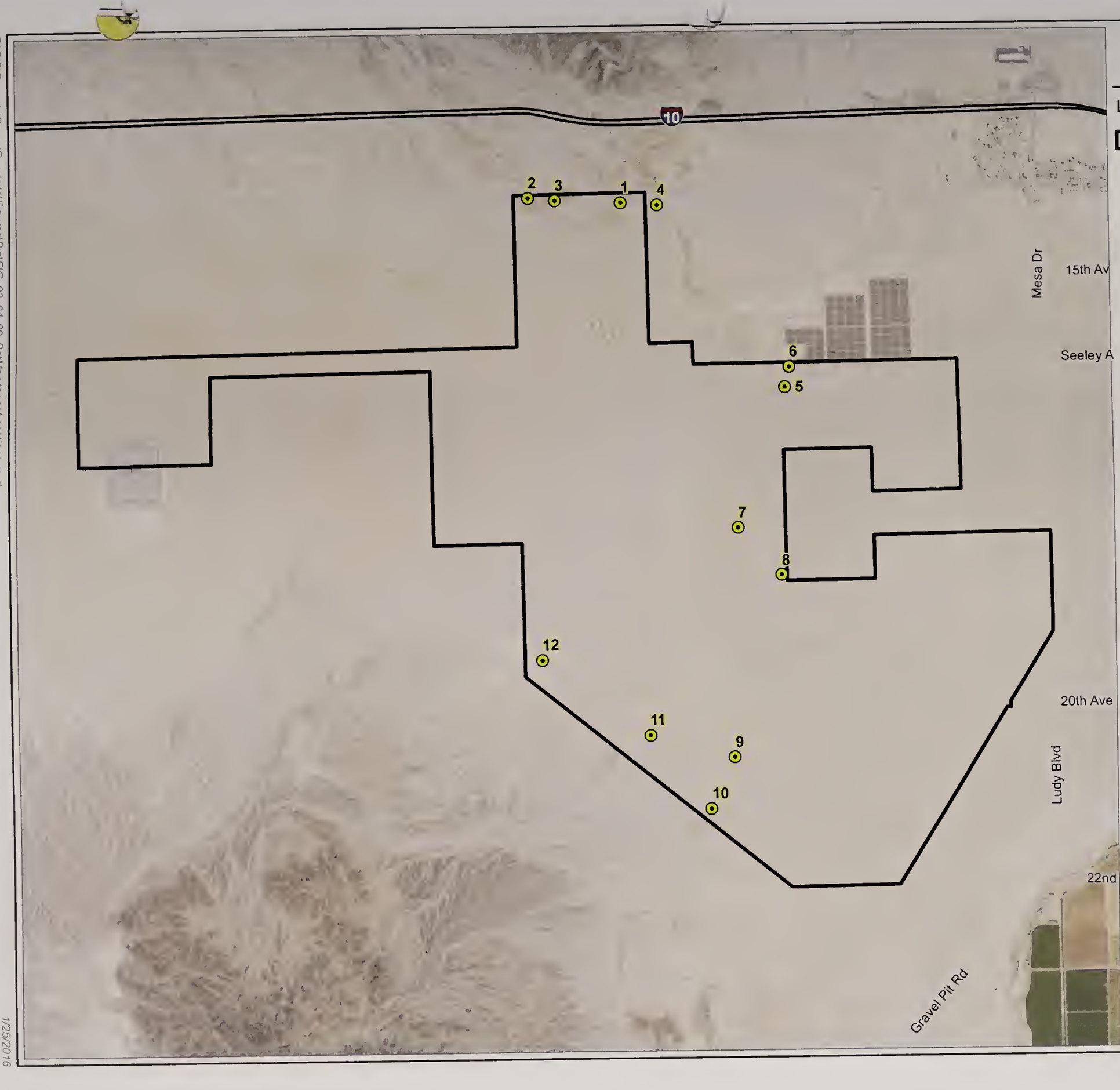
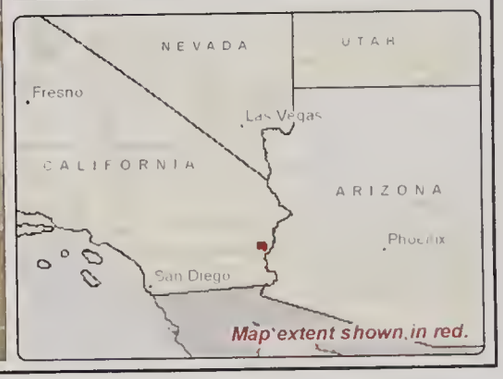


Figure 3.4-9
Acoustic Bat Monitoring Locations

0 0.5 1 Miles
0 2,000 4,000 Feet
N

Date 1/25/2016
Sources AECOM, BLM, CalTrans, First Solar, US Census



E:\GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_04_09_BatMonitoringLocations.mxd

1/25/2016

M:\Denver_GIS\Projects\DesertQuartzite\Figures\BioI\FIG_03_04_10_BighornWHMAs.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Substation

WHMAs

- Bighorn Sheep Unoccupied Range
- Bighorn Sheep Connectivity Corridor
- Multi Species

Figure 3.4-10
Bighorn Sheep WHMAs

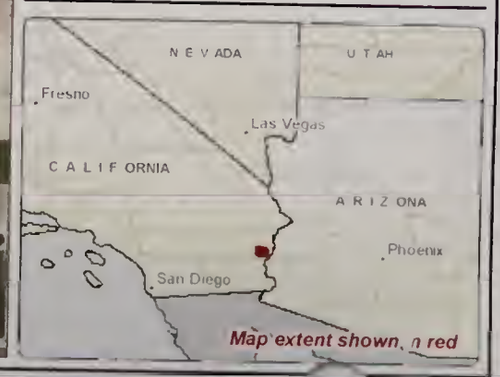
0 0.5 1 Miles

0 1 2 Kilometers

N

Date: 3/12/2018

Sources: AECOM, BLM, First Solar, USGS



3/12/2018

T:\4_Shannon FIG\SLayout\Current_APE_10_3.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- APE - Direct Impacts
- APE - Indirect Impacts
- Boundary of Private Land Parcel
- Substation
- Buildings

Gas Line Rd

10

Proposed On-Site Substation

Colorado River Substation

15th Ave

Mesa Dr

Haig Dr

Ludy Blvd T 7 S R 21 E
T 7 S R 22 E

Grave Pit Rd

Figure 3.5-1
Current APE

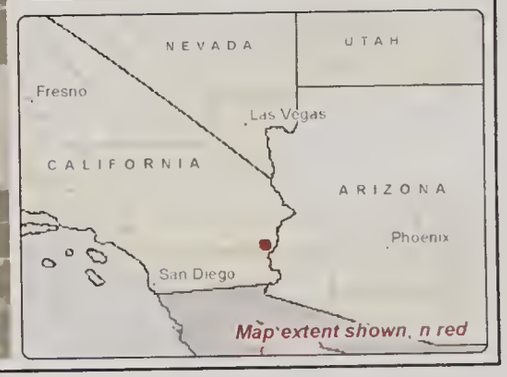
0 2,000 4,000 Feet

0 0.5 1 Miles

N

Date: 4/8/2016

Sources: AECOM, BLM, ESRI, First Solar, US Census, USGS



4/8/2016

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_06_01_EnvJustice.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Block Group Boundary
- Block Groups with High Proportions of Individuals Living in Poverty (2015)
- Block Groups with High Minority Proportions (2015)
- Indian Reservation

469.00.1

459.00.1

459.00.2

Ford Dry Lake

BLYTHE

EAST BLYTHE

EHRENBERG

COLORADO RIVER INDIAN RESERVATION

RIPLEY

PALO VERDE

RIVERSIDE COUNTY

IMPERIAL COUNTY

LA PAZ COUNTY

CALIFORNIA

ARIZONA

Colorado River

10

95

78

1

Figure 3.6-1
Environmental Justice

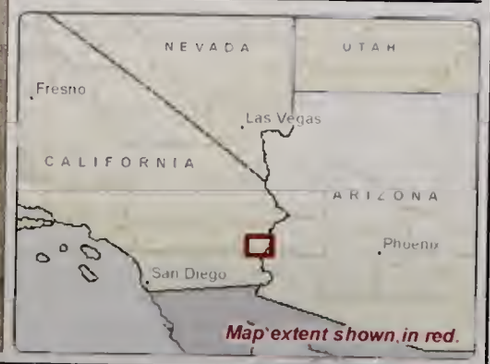
0 2 4 Miles

0 3 6 Kilometers

N

Date 3/4/2016

Sources AECOM US Census USDA



3/4/2016

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_07_01_Geology.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Substation

List of Project Site Map Units

- Qw - Alluvium of modern washes (Holocene)
- Qs - Eolian sand (Holocene)
- Qa3 - Alluvial fan and valley deposits (Unit 3) (Holocene to Pleistocene)
- Qa6 - Alluvial fan and alluvial valley deposits (Unit 6) (Holocene)
- Qpv - Alluvial deposits of Palo Verde Mesa (Pleistocene)

Figure 3.7-1
Geologic Map of Project Area

0 2,000 4,000 Feet
0 0.5 1 Miles
N

Date 3/15/2016
Sources AECOM, BLM, CalTrans, First Solar, US Census, USGS



3/15/2016

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_07_Soils.mxd

Desert Quartzite Solar Project EIS/EIR

Gas Line Rd

15th Ave

Mesa Dr

Ludy Blvd

Gravel Pit Rd

Ch

Ce

RoB

RoA

Ac

Or

Af

RoA

Or

Af

Oc

RsA

Ac

Or

RoB

RsA

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Substation

SSURGO Soils

- Ac - Aco gravelly loamy sand
- Af - Aco sandy loam
- Ce - Carrizo gravelly sand
- Ch - Chuckawalla very gravelly silt loam
- Oc - Orita fine sand
- Or - Orita gravelly fine sandy loam
- RoA - Rositas fine sand, 0 to 2 percent slopes
- RoB - Rositas fine sand, 2 to 9 percent slopes
- RsA - Rositas gravelly loamy sand, 0 to 2 percent slopes
- No NRCS Data

General Soil Types

- Fine Sand
- Sandy Loam

Figure 3.7-2 Soil Map of Project Area

0 2,000 4,000 Feet

0 0.5 1 Miles

N

Date: 3/15/2016

Sources: AECOM, CalTrans, First Solar, US Census, USDA, USGS



3/15/2016

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_03_07_03_HydroGroups.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

SSURGO Soils

Hydrologic Group

- A - Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands These soils have a high rate of water transmission.
- B - Soils having a moderate infiltration rate when thoroughly wet These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
- C - Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission..

Figure 3.7-3
SSURGO Soils
Hydrologic Groups

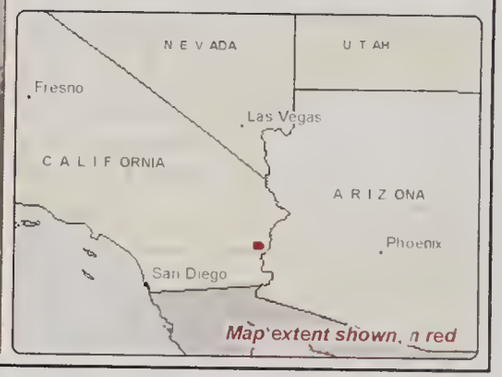
0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date 4/24/2018

Sources AECOM, BLM, CalTrans, First Solar, NRCS, US Census



4/24/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_03_07_04_WindErodibility.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

SSURGO Soils

Wind Erodibility (Tons/Acre/Year)

- 310 t/a/y
- 134 t/a/y
- 86 t/a/y
- 38 t/a/y

Figure 3.7-4
SSURGO Soils
Wind Erodibilty

0 0.5 1 Miles

0 2,000 4,000 Feet

N

Date 3/13/2018

Sources: AECOM, BLM, CalTrans, First Solar, NRCS, US Census



3/13/2018

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_09_01_AirportCompatibilityZones.mxd

Gas Line Rd

10

15th Ave

Mesa Dr

Haig Dr

Proposed
On-Site
Substation

Colorado River
Substation

Gravel Pit Rd

Ludy Blvd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Proposed Action Footprint
- Boundary of Private Land Parcel
- Substation
- Gen-Tie Line
- Blythe Airport Property Boundary

Airport Compatibility Zones

- B2
- C
- D
- E

Figure 3.9-1
Airport Compatibility Zones

0 2,000 4,000 Feet

0 0.5 1 Miles

N

Date: 2/2/2016

Sources: AECOM, First Solar, Riverside County, USGS, Census



2/2/2016

M:\Denver_GIS\Projects\DesertQuartzite\Figures\Bio\FIG_03_10_01_LandManagementAreas.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Bradshaw Trail
- Area of Critical Environmental Concern
- Wilderness Area
- BLM Herd Management Area
- Desert Tortoise Critical Habitat

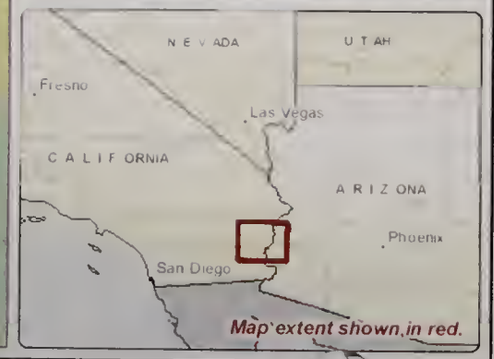
Surface Management

- BIA
- BLM
- BOR
- County/Local
- DOD
- NPS
- State
- USFWS
- Other/Private

Figure 3.10-1
Land Management Areas

0 5 10 Miles
0 5 10 Kilometers
N

Date: 3/12/2018
Sources: AECOM, BLM, CalTrans, First Solar, US Census, USFWS



Joshua Tree Wilderness
Palen Lake
Palen/McCoy Wilderness
Rice Valley Wilderness
Midland
Big Maria Mountains Wilderness
Riverside Mountains Wilderness
Poston
Big Marias ACEC
Palen Dry Lake ACEC
Ford Dry Lake
Project Location
Quartzsite
Blythe
East Blythe
Ehrenberg
Chuckwalla Mountains Wilderness
Chuckwalla Valley Dune Thicket ACEC
Mule Mountains ACEC
Ripley
Bradshaw Trail
Little Chuckwalla Mountains Wilderness
RIVERSIDE COUNTY
IMPERIAL COUNTY
Palo Verde
Colorado River
RIVERSIDE COUNTY
LA PAZ COUNTY
Chuckwalla DWMA ACEC
Palo Verde Mountains Wilderness
IMPERIAL COUNTY
LA PAZ COUNTY
Cibola
LA PAZ COUNTY
YUMA COUNTY
Cibola Lake
Trigo Mountains Wilderness
Chocolate/Mule Mountain HMA
CALIFORNIA
ARIZONA
Imperial Refuge Wilderness
Indian Pass Wilderness

3/12/2018

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_03_10_02_MUCsEnergyCorridors.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Proposed Action Area
- Colorado River Substation
- Gen-Tie Line
- BLM Energy Corridor

BLM Multiple Use Classes

- Limited
- Moderate

CORRIDOR K/SEC 368 FEDERAL ENERGY CORRIDOR 30-52

CORRIDOR J

70

Figure 3.10-2
BLM Multiple Use Classes & Energy Corridors

0 1 2 Miles

0 1 2 Kilometers

N

Date: 3/12/2018

Sources: AECOM, BLM, CalTrans, First Solar, US Census



3/12/2018

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_12_01_Noise.mxd

M:\Denver_GIS\Projects\DesertQuartzite\Figures\Biology\FIG_03_12_01_Noise.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Residence

Ambient Sound Measurement Locations

- Nearest Noise Sensitive Receptor (NNSR)
- Long Term
- Short Term

Surface Management

- BLM
- BOR
- State

Blythe Airport

ST06
ST04
ST05
ST03
LT1
ST02
ST01
NNSR
ST11
Nicholls Warm Springs/. Mesa Verde
ST10
ST07
ST09
ST08
Ripley
10
78
CALIFORNIA
ARIZONA

Figure 3.12-1
Noise Measurement Locations

0 1 2 Miles
0 2 4 Kilometers
N

Date: 1/21/2016
Sources: AECOM, First Solar, USDA, US Census, Riverside County



1/21/2016

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_14_01_BLM_RecAreas.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Bradshaw Trail
- Long Term Visitor
- Area of Critical Environmental Concern
- Wilderness Area

Surface Management

- BIA
- BLM
- BOR
- County/Local
- DOD
- State
- USFWS
- Other/Private

Boundaries

- State Boundary
- County Boundary
- Urban

Palen/McCoy Wilderness
Rice Valley Wilderness
Midland
Big Maria Mountains Wilderness
Palen Lake
Palen/McCoy Wilderness
Big Marias ACEC
Midland LTVA
Palen Dry Lake ACEC
Ford Dry Lake
Project Location
Blythe
East Blythe
Ehrenberg
60
Chuckwalla Mountains Wilderness
Chuckwalla Valley Dune Thicket ACEC
Mule Mountains ACEC
Ripley
Bradshaw Trail
Chuckwalla DWMA ACEC
Little Chuckwalla Mountains Wilderness
Mule Mountain LTVA
Palo Verde
RIVERSIDE COUNTY
IMPERIAL COUNTY
Colorado River
Palo Verde Mountains Wilderness
Cibola
Trigo Mountains Wilderness
78
Cibola Lake

Figure 3.14-1
BLM Administered Recreation Resources

0 4 8 Miles
0 5 10 Kilometers
N

Date: 3/15/2016
Sources: AECOM, BLM, CalTrans, First Solar, US Census



3/15/2016

2/17/2016

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_03_14_02_Regional_RecAreas.mxd

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_14_02_Regional_RecAreas.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Park/Open Space

Surface Management

- BIA
- BLM
- BOR
- County/Local
- DOD
- NPS
- State
- USFWS
- Other/Private

Boundaries

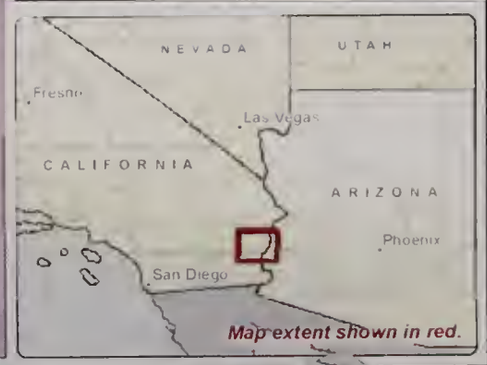
- State Boundary
- County Boundary
- Urban Area

Midland
Palen Lake
Ford Dry Lake
Blythe Municipal Golf Course
Mayflower Park
Riviera Marina Park
Todd Park
Blythe
Miller Park
Ehrenberg
Goose Flats Wildlife Area
Appleby Park
60
Ripley
McIntyre Park
Colorado River
Palo Verde
RIVERSIDE COUNTY
IMPERIAL COUNTY
Palo Verde Park
Cibola
78
Cibola Lake

Figure 3.14-2
Regional Recreation Resources

0 4 8 Miles
0 5 10 Kilometers
N

Date 3/15/2016
Sources AECOM BLM CalTrans First Solar US Census



3/15/2016

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_03_14_03_BLM_Routes_w_Access.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Open Routes

- Maintained Dirt
- Unmaintained Dirt

Access Routes

- Emergency Access
- Mule Mountains Alternative Access

Utilities

- Substation
- Gen-Tie Line

Proposed Utilities

- Proposed Internal Power Collection Line
- Proposed Power Supply Lines
- Proposed Telecommunications Line

Surface Management

BLM | Other/Private | State

Proposed On-Site Substation

Colorado River Substation

661081 | 661084 Gas Line Rd | 661085 | 661088 | 661089 | 660860 | 661091 | 661090 | 660860 | 660859 | 660709 | 661103 | 660858 | 660858 | 660857 | 8th Ave | 660637 | 661087 | 660864 | 15th Ave | Mesa Dr | 660862 | 660867 | Seeley Ave | 660870 | 660874 | 660866 | 660875 | 660703 | 661501 | 660871 | 661092 | 661102 | 20th Ave | 660863 | 660868 | Ludy Blvd | 660869 | 661096 | 660876 | 22nd Ave | 661094 | 661093 | S Rannells Blvd | Gravel Pit Rd | 24th Ave | 0

Figure 3.14-3
BLM Routes Near Project

0 0.5 1 Miles
0 1 2 Kilometers
N

Date 2/17/2018
Sources AECOM, BLM, CalTrans, First Solar, US Census



2/17/2018

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_15_01_DriveTime.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- State Boundary
- County Boundary

Highways

- Interstate
- State/US Highway

Drive Times

- 0-60 Minutes
- 60-90 Minutes
- 90-120 Minutes

Project Location

Figure 3.15-1
Drive Times

0 25 50 Miles
0 25 50 Kilometers
N

Date 4/27/2016
Sources AECOM First Solar US Census



4/27/2016

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Area of Critical Environmental Concern
- Wilderness Area
- Bradshaw Trail

Surface Management

- BIA
- BLM
- BOR
- County/Local
- DOD
- NPS
- State
- USFWS
- Other/Private

Boundaries

- State
- County
- Urban

Riverside Mountains Wilderness
Poston
Rice Valley Wilderness
Midland
Joshua Tree Wilderness
Big Marla Mountains Wilderness
Palen Lake
Palen/McCoy Wilderness
Big Marias ACEC
Palen Dry Lake ACEC
Quartzsite
Ford Dry Lake
Project Location
Blythe
East Blythe
Ehrenberg
Chuckwalla Mountains Wilderness
Chuckwalla Valley Dune Thicket ACEC
Mule Mountains ACEC
Ripley
Bradshaw Trail
Little Chuckwalla Mountains Wilderness
Palo Verde
Colorado River
RIVERSIDE COUNTY
IMPERIAL COUNTY
Chuckwalla DWMA ACEC
Palo Verde Mountains Wilderness
Cibola
LA PAZ COUNTY
Y MA COUNTY
Cibola Lake
Trigo Mountains Wilderness
CALIFORNIA
ARIZONA
Indian Pass Wilderness
Imperial Refuge Wilderness

Figure 3.16-1
Special Designation Areas

0 5 10 Miles
0 5 10 Kilometers
N

Date: 3/15/2016
Sources: AECOM, BLM, CalTrans, First Solar, US Census



E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_16_01_SpecialDesignationAreas.mxd

3/15/2016

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_17_01_Intersections.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel

Intersections

1 – SR-78 (Neighbours Boulevard) and I-10 Westbound Ramps

2 - SR-78 (Neighbours Boulevard) and I-10 Eastbound Ramps

3 - SR-78 (Neighbours Boulevard) and 14th Avenue

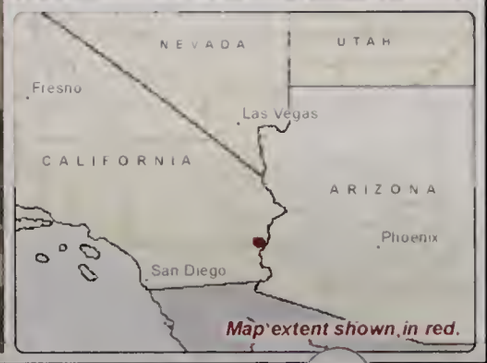
4 - SR-78 (Neighbours Boulevard) and 16th Avenue

W 11th Ave
N Neighbours Blvd
W Chanslor Way
W Hobsonway
8th Ave
10
1
2
W 14th Ave
3
15th Ave
Dave St
Keim Blvd
Mesa Dr
Seeley Ave
16th Ave
4
18th Ave
S Neighbours Blvd
78
20th Ave
Rannells Blvd
Lucy Blvd
W 22nd Ave
22nd Ave
S Rannells Blvd
Buck Blvd
24th Ave
Gravel Pit Rd

Figure 3.17-1
Locations of Intersections Analyzed for Traffic Impacts

0 0.5 1 Miles
0 1 2 Kilometers
N

Date 4/12/2016
Sources AECOM First Solar USGS



4/12/2016

E:\GIS\Projects\DesertQuartzite\Figures\FIG_03_19_01_KOPs.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Gen-Tie Line
- Key Observation Point
- Bradshaw Trail
- Area of Critical Environmental Concern
- Wilderness Area

Surface Management

- BIA
- BLM
- BOR
- County/Local
- DOD
- State
- USFWS
- Other/Private

Palen/McCoy Wilderness

Big Maria Mountains Wilderness

Blythe

East Blythe

Ehrenberg

10

Chuckwalla Valley Dune Thicket ACEC

2

Mule Mountains ACEC

Ripley

7

LA PAZ COUNTY

5

CALIFORNIA

ARIZONA

Palo Verde

RIVERSIDE COUNTY

IMPERIAL COUNTY

Chuckwalla DWMA ACEC

Colorado River

8

Palo Verde Mountains Wilderness

Figure 3.19-1
KOP Locations for Visual Impact Analysis

0 2 4 Miles

0 3 6 Kilometers

N

Date 3/15/2016

Sources AECOM, BLM, ESRI, First Solar, US Census



3/15/2016

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_03_21_01_FireIgnitions.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Colorado River Substation

Fire Ignition Locations

Fire Year

- 1990-1999
- 2000-2010
- 2011-2016

Surface Management

- BLM
- State
- Other/Private

Boundaries

- State Boundary
- County Boundary
- Urban Area

Mesa Dr
Black Creek Rd
Gas Line Rd
Blythe Airport
B
Mesa Dr
78
S Defra'n Blvd
22nd Ave
Ripley
28th Ave
Wileys Well Rd
Bradshaw Trl
S Neighbours Blvd

Figure 3.21-1
Fire Ignitions near Project Area

0 1 2 Miles
0 2 4 Kilometers
N

Date: 3/13/2018
Sources: AECOM, BLM, ESRI, First Solar, US Census, USGS



3/13/2018

E:\GIS\Projects\DesertQuartzite\Figures\FIG_04_01_01_CumulativeProjects.mxd

Desert Quartzite Solar Project EIS/EIR

Legend

- Desert Quartzite Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Colorado River Substation
- Area of Critical Environmental Concern
- Wilderness
- Lands with Wilderness Characteristics
- National Park Boundary
- BLM Energy Corridor

Proposed Projects

- Solar
- Other Construction
- 1 Reference Numbers from Tables 4.1-2 and 4.1-3

Transmission Lines

- Proposed 230kV Transmission LIne
- Proposed Desert Southwest 500kV Line
- Existing Devers-Palo Verde #1 500kV Line
- Existing Devers-Palo Verde #2 500kV Line

Figure 4.1-1
Cumulative Projects

0 5 10 Miles

0 5 10 Kilometers

N

Date: 12/8/2016

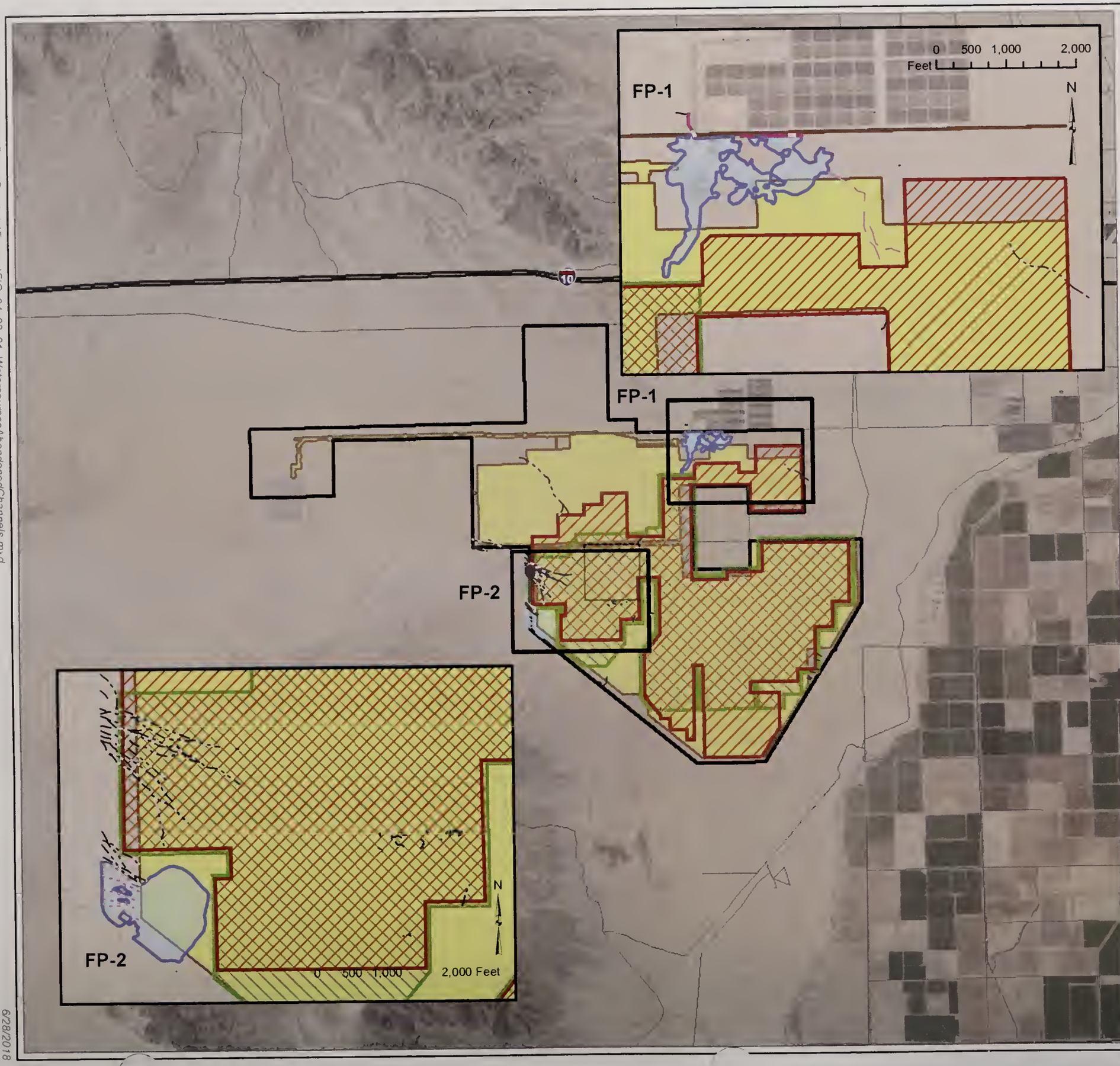
Sources: AECOM, BLM, ESRI, First Solar, US Census, USGS



12/8/2016

M:\Denver_GIS\Projects\DesertQuartzite\Figures\FIG_04_03_01_WatercoursesAbandonedChannels.mxd

Desert Quartzite Solar Project EIS/EIR



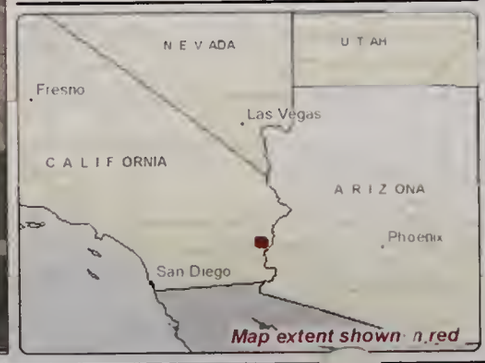
Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Active Watercourse
- Alt 1 Footprint
- Alt 2 Footprint
- Alt 3 Footprint
- Active Channel
- Dormant Channel
- Abandoned Channel

Figure 4.3-1
State Jurisdictional Watercourse Areas

0 0.5 1 Miles
0 1 2 Kilometers
N

Date 6/28/2018
Sources AECOM BLM CalTrans First Solar US Census Huffman Broadway



6/28/2018

E:\GIS\Projects\DesertQuartzite\Figures\FIG_04_12_01_NNSR_2km_Radius.mxd

Desert Quartzite Solar Project EIS/EIR

Gas Line Rd

T 6S R 21E
T 7S R 21E

15th Ave

Mesa Dr

Hag Dr

Proposed On-Site Substation

Colorado River Substation

Ludy Blvd

T 7S R 21E
T 7S R 22E

Gravel Pit Rd

Legend

- Right-of-Way Application Boundary
- Boundary of Private Land Parcel
- Substation
- Gen-Tie Line
- Construction Staging Area
- Buildings
- Proposed Met Station
- Proposed Well Location
- Nearest Noise Sensitive Receptor (NNSR)
- 2 km radius from NNSR
- Access Road
- Typical PV Array

Proposed Utilities

- Internal Power Collection Line
- Proposed Telecommunications Line

Surface Management

- BLM
- Other/Private

Figure 4.12-1
Portion of Project Area Within 2 KM of NNSR

0 2,000 4,000 Feet

0 0.5 1 Miles

N

Date: 1/30/2017

Sources: AECOM, BLM, ESRI, First Solar, US Census, USGS



1/30/2017



Figure 4.19-1

KOP2 - Chuckwalla DWMA, Looking East - *Existing View*

a. For on-screen display: scale bar to be 4 inches wide, viewing distance is 11.2 inches.
b. When printed on 11x17 paper, viewing distance is 11.2 inches.

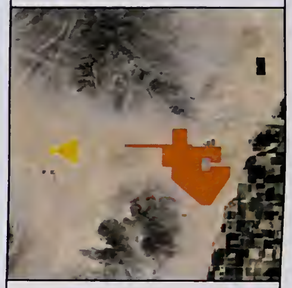
First Solar.

Desert Quartzite Solar Project

KOP2

Chuckwalla DWMA

Viewpoint Location Project Area



Easting Position (UTM Zone 11)	695432.7
Northing Position (UTM Zone 11)	3718027.8
Elevation of Photopoint Position (NAD83)	424.5
Height of Camera Above Ground (ft)	5.4
Date of Photography	26 February 2015 at 01:40 PM
Orientation of View	E
Horizontal Field of View	85°
Vertical Field of View	46°

NOTES

Viewpoint locations have been precision surveyed by

The Holt Group, Inc.
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Figure 4.19-2

KOP2 - Chuckwalla DWMA, Looking East - *Proposed View*

a. For on-screen display: scale bar to be 4 inches wide, viewing distance is 11.2 inches.
b. When printed on 11x17 paper, viewing distance is 11.2 inches.

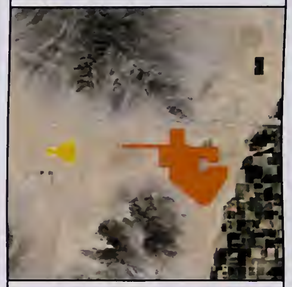
First Solar.

Desert Quartzite Solar Project

KOP2

Chuckwalla DWMA

Viewpoint Location Project Area



Easting Position (UTM Zone 11):	**695432.7**
Northing Position (UTM Zone 11):	**3718027.8**
Elevation of Photopoint Position (NAD83):	**424.5**
Height of Camera Above Ground (ft):	**5.4**
Date of Photography:	**26 February 2015 at 01:40 PM**
Orientation of View:	**E**
Horizontal Field of View:	**65°**
Vertical Field of View:	**46°**

NOTES:

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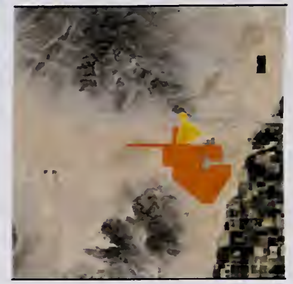
First Solar.

Desert Quartzite Solar Project

KOP3

McCoy Mountains

Viewpoint Location Project Area



Easting Position (UTM Zone 11):	**706864.0**
Northing Position (UTM Zone 11):	**3721347.7**
Elevation of Photopoint Position (NAD83):	**544.6**
Height of Camera Above Ground (ft):	**5.4**
Date of Photography:	**26 February 2015 at 03:12 PM**
Orientation of View:	**S**
Horizontal Field of View:	**65°**
Vertical Field of View:	**46°**

NOTES:

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Figure 4.19-3

KOP3 - McCoy Mountains, Looking South - *Existing View*

a. For on-screen display: scale bar to be 4 inches wide, viewing distance is 11.2 inches.



Figure 4.19-4

KOP3 - McCoy Mountains, Looking South - *Proposed View*

a. For on-screen display: scale bar to be 4 inches wide, viewing distance is 11.2 inches.
b. When printed on 11x17 paper, viewing distance is 11.2 inches.

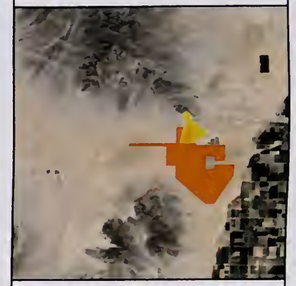
First Solar.

Desert Quartzite Solar Project

KOP3

McCoy Mountains

Viewpoint Location Project Area



Easting Position (UTM Zone 11):	**706864.0**
Northing Position (UTM Zone 11):	**3721347.7**
Elevation of Photopoint Position (NAD83):	**544.6**
Height of Camera Above Ground (ft):	**5.4**
Date of Photography:	**26 February 2015 at 03:12 PM**
Orientation of View:	**S**
Horizontal Field of View:	**65°**
Vertical Field of View:	**46°**

NOTES:

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Figure 4.19-5

KOP4 - Mule Mountains, Looking Northeast - *Existing View*

a. For on-screen display: scale bar to be 4 inches wide, viewing distance is 11.2 inches.
b. When printed on 11x17 paper, viewing distance is 11.2 inches.

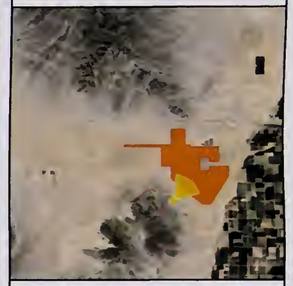
First Solar.

Desert Quartzite Solar Project

KOP4

Mule Mountains

Viewpoint Location Project Area



Easting Position (UTM Zone 11):	**706270.0**
Northing Position (UTM Zone 11):	**3713836.2**
Elevation of Photopoint Position (NAD83):	**435.9**
Height of Camera Above Ground (ft):	**5.4**
Date of Photography:	**26 February 2015 at 12:00 PM**
Orientation of View:	**NE**
Horizontal Field of View:	**65°**
Vertical Field of View:	**46°**

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Figure 4.19-6

KOP4 - Mule Mountains, Looking Northeast - *Proposed View*

a. For on-screen display: scale bar to be 4 inches wide, viewing distance is 11.2 inches.
b. When printed on 11x17 paper, viewing distance is 11.2 inches.

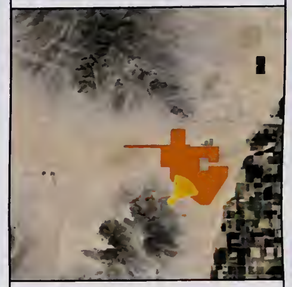
First Solar.

Desert Quartzite Solar Project

KOP4

Mule Mountains

Viewpoint Location Project Area



Easting Position (UTM Zone 11):	**706270.0**
Northing Position (UTM Zone 11):	**3713836.2**
Elevation of Photopoint Position (NAD83):	**435.9**
Height of Camera Above Ground (ft):	**5.4**
Date of Photography:	**26 February 2015 at 12:00 PM**
Orientation of View:	**NE**
Horizontal Field of View:	**65°**
Vertical Field of View:	**46°**

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KOP1c

Interstate 10



Easting Position (UTM Zone 11):	**702753.8**
Northing Position (UTM Zone 11):	**3721002.0**
Elevation of Photopoint Position (NAD83):	**539.5**
Height of Camera Above Ground (ft):	**5.4**
Date of Photography:	**27 February 2015 at 01:12 PM**
Orientation of View:	**SE**
Horizontal Field of View:	**65°**
Vertical Field of View:	**46°**

Figure 4.19-7

KOP1c - Interstate 10, Looking Southeast - *Existing View*



Figure 4.19-8

KOP1c - Interstate 10, Looking Southeast - *Proposed View*

a. For on-screen display: scale bar to be 4 inches wide, viewing distance is 11.2 inches.
b. When printed on 11x17 paper, viewing distance is 11.2 inches.

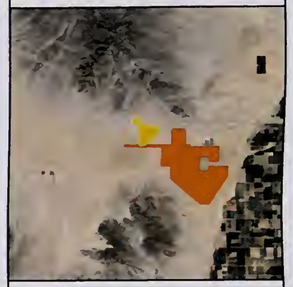
First Solar.

Desert Quartzite Solar Project

KOP1c

Interstate 10

Viewpoint Location Project Area



Easting Position (UTM Zone 11):	**702753.8**
Northing Position (UTM Zone 11):	**3721002.0**
Elevation of Photopoint Position (NAD83):	**539.5**
Height of Camera Above Ground (ft):	**5.4**
Date of Photography:	**27 February 2015 at 01:12 PM**
Orientation of View:	**SE**
Horizontal Field of View:	**65°**
Vertical Field of View:	**46°**

NOTES

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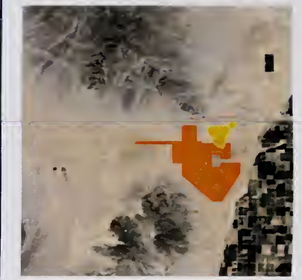
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KOP6

Nicholls Warm Springs



Easting Position (UTM Zone 11):	**710409.6**
Northing Position (UTM Zone 11):	**3720442.8**
Elevation of Photopoint Position (NAD83):	**397.2**
Height of Camera Above Ground (ft):	**5.4**
Date of Photography:	**27 February 2015 at 12:33 PM**
Orientation of View:	**SW**
Horizontal Field of View:	**65°**
Vertical Field of View:	**46°**

Figure 4.19-9

KOP6 - Nicholls Warm Springs, Looking Southwest - *Existing View*



Figure 4.19-10

KOP6 - Nicholls Warm Springs, Looking Southwest - *Proposed View*

a. For on-screen display: scale bar to be 4 inches wide, viewing distance is 11.2 inches.
b. When printed on 11x17 paper, viewing distance is 11.2 inches.

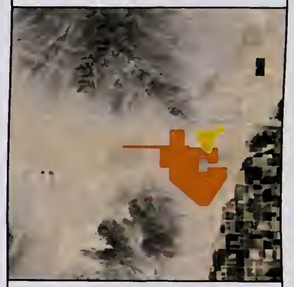
First Solar.

Desert Quartzite Solar Project

KOP6

Nicholls Warm Springs

Viewpoint Location Project Area



Easting Position (UTM Zone 11):	**710409.6**
Northing Position (UTM Zone 11):	**3720442.8**
Elevation of Photopoint Position (NAD83):	**397.2**
Height of Camera Above Ground (ft):	**5.4**
Date of Photography:	**27 February 2015 at 12:33 PM**
Orientation of View:	**SW**
Horizontal Field of View:	**65°**
Vertical Field of View:	**46°**

NOTES:

Viewpoint locations have been precision surveyed by:

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Appendix B Appendix C Appendix D

APPENDIX B
ACRONYMS AND GLOSSARY

APPENDIX B - ACRONYMNS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µg/L	micrograms per Liter
*µg/m*3	micrograms per cubic meter
AADT	Annual Average Daily Traffic
AAQS	ambient air quality standards
AB 32	California Global Warming Solutions Act of 2006
AB	Authorized Biologist
AC	alternating current
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ACS	American Community Survey
AF	acre-feet
AFC	Application for Certification
AFY	acre-feet per year
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
amsl	Above Mean Sea Level
APE	Area of Potential Effects
APLIC	Avian Power Line Interaction Committee
APM	Applicant-Proposed Measures
APN	Assessor's Parcel Number
ARPA	Archaeological Resources Protection Act of 1979
ASTM	American Society for Testing Materials Standards
BA	Biological Assessment
BBCS	Bird and Bat Conservation Strategy
BCC	Birds of Conservation Concern
BEA	United States Bureau of Economic Analysis
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BLM	United States Department of Interior, Bureau of Land Management
BMPs	best management practices
BMSP	Blythe Mesa Solar Project
BO	Biological Opinion
BRMIMP	Biological Resources Mitigation, Implementation, and Monitoring Plan
BSPP	Blythe Solar Power Project
BTU/kWh	British thermal units per kilowatt hour
BUOW	Western burrowing owl
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAL FIRE	California Department of Forestry and Fire Protection
CAISO	California Independent System Operator

CalEPA	California Environmental Protection Agency
Cal-IPC	California Invasive Plant Council
Cal-OSHA	California - Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CARIDAP	California Archaeological Resources Identification and Data Acquisition Program
CBC	California Building Code
CBOC	California Burrowing Owl Consortium
CCD	Census County Division
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDC	Centers for Disease Control
CDCA	California Desert Conservation Area
CDCA Plan	California Desert Conservation Area Plan of 1980, as amended
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CDP	Census Designated Place
CDPA	California Desert Protection Act of 1994
CDPH	California Department of Public Health
CDOC	California Department of Conservation
CdTe	cadmium telluride
CDV	canine distemper virus
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERS	California Environmental Reporting System
CESA	California Endangered Species Act
CFC	chlorofluorocarbons
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Resources Information System
CHWMP	Riverside County Hazardous Waste Management Plan
CIWMP	Countywide Integrated Waste Management Plan
CMA	Congestion Management Agency
CMA	Conservation and Management Action
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide

CO_2e	carbon dioxide equivalents
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRMMP	Cultural Resources Monitoring and Mitigation Plan
CRR	Cultural Resources Report
CRS	Cultural Resources Specialist
CRSS	Colorado River Substation
cSi	Crystalline Silicon
CT	census tract
CUP	Conditional Use Permit
CUPA	Certified Unified Program Authority
CVGB	Chuckwalla Valley Groundwater Basin
CWA	Clean Water Act
cy	cubic yards
DAS	data acquisition system
dB	decibel
dBA	A-weighted decibel
DC	direct current
DESCP	Drainage Erosion and Sedimentation Control Plan
DFA	Development Focus Area
DHS	United States Department of Homeland Security
DoD	United States Department of Defense
DOE	United States Department of Energy
DOF	California Department of Finance
DOI	United States Department of Interior
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DPV1	Devers-Palo Verde Transmission Line Number 1
DPV2	Devers-Palo Verde Transmission Line Number 2
DQSP	Desert Quartzite Solar Project
DRECP	California Desert Renewable Energy Conservation Plan
DTC/C-AMA	Desert Training Center California-Arizona Maneuver Area
DTSC	Department of Toxic Substances Control
DWMA	Desert Wildlife Management Area
DWR	Department of Water Resources
EAP	Emergency Action Plan
EICMPP	Environmental Inspection and Compliance Monitoring Program and Plan
EDD	California Employment Development Department
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Field
EPAct	Energy Policy Act of 2005
EPCRA	Emergency Planning and Community Right-To-Know Act of 1986
EPRI	Electric Power Research Institute

EPS	Emission Performance Standard
FAA	Federal Aviation Administration
FAST	Fixing America's Surface Transportation Act
FE	Federally listed as endangered
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act
FR	Federal Register
ft	foot
FT	Federally listed as threatened
FTA	Federal Transit Administration
gal	gallon
g/m2yr	grams per square meter per year
GDP	gross domestic product
gen-tie	generation transmission
GHG	greenhouse gas
GIS	geographic information system
gpd	gallons per day
gpd/ft	gallons per day per foot
gpd/ft2	gallons per day per square foot
gpm	gallons per minute
GPS	global positioning system
GWP	global warming potential
H_2S	hydrogen sulfide
HMBP	Hazardous Materials Business Plan
HCP	habitat conservation plan
HMA	Herd Management Area
HPTP	Historic Properties Treatment Plan
HRA	health risk assessment
HVAC	Heating, ventilation, and air conditioning
I-10	Interstate 10
IBC	International Building Code
IM	Instructional Memorandum
IOP	Interagency Operating Procedures
IPCC	International Panel on Climate Change
kg	kilogram
KOP	key observation point
kV	kilovolt
kW	kilowatt
kWh	kilowatt-hour

L90	The A-weighted noise level that is exceeded 90 percent of the time during the measurement period.
lbs	pounds
Ldn	day-night average noise level equivalent continuous sound level
Leq	equivalent continuous sound level
LORS	laws, ordinances, regulations, and standards
LOS	level of service
LR2000	Land & Mineral Legacy Rehost 2000 System
LRA	Local Responsibility Area
LTVAs	Long Term Visitor Areas
m	meter
MBTA	Migratory Bird Treaty Act
MCA	Medieval Climatic Anomaly
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MDP	Monitoring and Discovery Plan
mg/L	milligrams per liter
mg/m3	milligrams per cubic meter
mi	mile
ml	milliliter
mm	millimeter
MM	Modified Mercalli
MOA	Memorandum of Agreement
Modified BSPP	Modified Blythe Solar Power Project
MPH	miles per hour
MRDS	Mineral Resources Data System
MRZ	Mineral Resource Zone
m/s	meters per second
MSEP	McCoy Solar Energy Project
MT	metric ton
MTR	Military Training Route
MUC	Multiple-Use Class
MW	megawatt
MWh	megawatt-hour
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NECO	Northern and Eastern Colorado Desert Coordinated Management Plan
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NFWF	National Fish and Wildlife Foundation
NGI	Norwegian Geotechnical Institute
NHPA	National Historic Preservation Act
NLCS	National Landscape Conservation System

NNSR	Nearest Noise Sensitive Receptor
NO_2	nitrogen dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historic Places
NSPS	New Source Performance Standard
NSR	New Source Review
NTP	Notice to Proceed
NWIS	National Water Information System
O2	oxygen
O3	ozone
O&M	operation and maintenance
OEHHA	Office of Environmental Health Hazard Assessment
OHV	off-highway vehicle
OSHA	United States Occupational Safety and Health Administration
PA	Programmatic Agreement (when used in context of cultural resources)
PA	Plan Amendment (when used in context of CDCA Plan)
PA/EIS/EIR	Proposed Plan Amendment/Environmental Impact Statement/Environmental Impact Report
PAR	Property Analysis Record
PCE	Passenger Car Equivalents
PCS	power conversion station
PEIS	Programmatic Environmental Impact Statement
PFYC	Potential Fossil Yield Classification
PGA	peak ground acceleration
PHA	Project Historical Archaeologist
PL	Public Law
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
POD	Plan of Development
PPA	Power Purchase Agreement
ppm	parts per million
PPV	Peak Particle Velocity
PRMMP	Paleontologic Resources Monitoring and Mitigation Plan
PRPA	Paleontologic Resources Preservation Act
PSD	Prevention of Significant Deterioration
PTNCL	Prehistoric Trails Network Cultural Landscape
PUP	Public Use Permit

PV	photovoltaic
PVCS	Photovoltaic Combining Switchgear
PVGB	Palo Verde Groundwater Basin
PVID	Palo Verde Irrigation District
PVMGB	Palo Verde Mesa Groundwater Basin
PVVAP	Palo Verde Valley Area Plan
PVVGB	Palo Verde Valley Groundwater Basin
PVVTA	Palo Verde Valley Transit Agency
R	State characterized as rare
RCFD	Riverside County Fire Department
RCGP	Riverside County General Plan
RCRA	Resource Conservation and Recovery Act of 1976
RCTC	Riverside County Transportation Commission
ROD	Record of Decision
ROG	reactive organic gas
ROW	right-of-way
RMP	Resource Management Plan
RMS	Root Mean Square
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act of 1986
SCE	Southern California Edison
SDWA	Safe Drinking Water Act
SE	State listed as endangered
SEZ	Solar Energy Zone
SF	Standard form
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SLRU	Sensitivity Level Rating Units
SMARA	Surface Mining and Reclamation Act
SMZ	Sand Migration Zone
SO_2	sulfur dioxide
SO_X	sulfur oxides
SPCC	Spill Prevention Control and Countermeasures
SQRU	Scenic Quality Rating Units
SR	State Route
SRA	State Responsibility Area
SSC	Species of Special Concern
ST	State listed as threatened
SUA	Special Use Airspace
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	Tribal Cultural Resource

TDS	Total Dissolved Solids
TSCA	Toxic Substances Control Act of 1976
UL	Underwriters Laboratory
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UXO	unexploded ordnance
UV	ultraviolet
V	volts
VMT	vehicle miles traveled
VOC	volatile organic compound
VRI	Visual Resource Inventory
VRM	Visual Resource Management
VRMP	Vegetation Resources Management Plan
VSOI	visual sphere of influence
W	watts
WAPA	Western Area Power Administration
WDR	Waste Discharge Requirement
WEPS	Wind Erosion Prediction System
WEAP	Worker Environmental Awareness Program
WHMA	Wildlife Habitat Management Area
WIU	Wilderness Inventory Unit
WL	Watch List
WRCC	Western Regional Climate Center
WSA	Wilderness Study Area
WSA	Water Supply Assessment
W/m2	watts per square meter
yr	year

GLOSSARY

A

Air Basin: A regional area defined for state air quality management purposes based on considerations that include topographic features that influence meteorology and pollutant transport patterns, and political jurisdiction boundaries that influence the design and implementation of air quality management programs.

Alluvium: a fine-grained fertile soil consisting of mud, silt, and sand deposited by flowing water on flood plains, in river beds, and in estuaries.

Alluvial Fan: Fan shaped material of water deposited material.

Ambient Air Quality Standards (AAQS): A combination of air pollutant concentrations, exposure durations, and exposure frequencies that are established as thresholds above which adverse impacts to public health and welfare may be expected. Ambient air quality standards are set on a national level by the U.S. Environmental Protection Agency. Ambient air quality standards are set on a state level by public health or environmental protection agencies as authorized by state law.

Ambient Air: Outdoor air in locations accessible to the general public.

Area of Critical Environmental Concern (ACEC): A designated area on public lands where special management attention is required: (1) to protect and prevent irreparable damage to fish and wildlife; (2) to protect important historic, cultural, or scenic values, or other natural systems or processes; or (3) to protect life and safety from natural hazards.

Area of Potential Effects (APE): The geographic area or areas within which an action may directly or indirectly cause changes in the character or use of historic properties, if such properties exist.

Attainment Area: An area that has air quality as good as or better than a national or state ambient air quality standard. A single geographic area may be an attainment area for one pollutant and a non-attainment area for others.

B

Best Management Practices (BMPs): A practice or combination of practices that are determined to provide the most effective, environmentally sound, and economically feasible means of managing an activity and mitigating its impacts.

C

Cancer: A class of diseases characterized by uncontrolled growth of somatic cells. Cancers are typically caused by one of three mechanisms: chemically induced mutations or other changes to introduce new DNA into cells.

Carbon Monoxide (CO): A colorless, odorless gas that is toxic because it reduces the oxygen-carrying capacity of the blood.

Characteristic: A distinguishing trait, feature, or quality.

Characteristic Landscape: The established landscape within an area being viewed. This does not necessarily mean a naturalistic character. It could refer to an agricultural setting, an urban landscape, a primarily natural environment, or a combination of these types.

Climate: A statistical description of daily, seasonal, or annual weather conditions based on recent or long-term weather data. Climate descriptions typically emphasize average, maximum, and minimum conditions for temperature, precipitation, humidity, wind, cloud cover, and sunlight intensity patterns; statistics on the frequency and intensity of tornado, hurricane, or other severe storm events may also be included.

Contrast: Opposition or unlikeness of different forms, lines, colors, or textures in a landscape.

Contrast Rating: A method of analyzing the potential visual impacts of proposed management activities.

Corrosive Soils: Potential soil-induced electrochemical or chemical action that could corrode or deteriorate concrete, reinforcing steel in concrete structures, and bare-metal structures.

Criteria Pollutant: An air pollutant for which there is a national ambient air quality standard (carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, inhalable particulate matter, fine particulate matter, or airborne lead particles).

Critical Habitat: Habitat designated by the U.S. Fish and Wildlife Service under Section 4 of the Federal Endangered Species Act and under the following criteria: 1) specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features essential to the conservation of the species and that may require special management of protection; or 2) specific areas outside the geographical area by the species at the time it is listed but that are considered essential to the conservation of the species.

Cultural Landscape: A geographic area, including both natural and cultural resources, associated with a historic event, activity, group, or person; or, a geographic area that has been assigned cultural or social meaning by associated cultural groups.

Cultural Modification: Any man-caused change in the land form, water form, vegetation, or the addition of a structure which creates a visual contrast in the basic elements (form, line, color, texture) of the naturalistic character of a landscape.

Cultural Resource: A location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. Cultural resources include archaeological and historical sites, structures, buildings, objects, artifacts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains or areas where significant human events occurred, even though evidence of the events no longer remains. And they may include definite locations of traditional, cultural, or religious importance to specified social or cultural groups.

D

Day/Night Average Sound Level (Ldn): A 24-hour average noise level rating with a 10 dB penalty factor applied to nighttime noise levels. The Ldn value is very similar to the CNEL value, but does not include any weighting factor for noise during evening hours.

Decibel (dB): A generic term for measurement units based on the logarithm of the ratio between a measured value and a reference value. Decibel scales are most commonly associated with acoustics (using air pressure fluctuation data); but decibel scales sometimes are used for ground-borne vibrations or various electronic signal measurements.

Desert Pavement: A surface covering of closely packed rock fragments of pebble or cobble size found on desert soils.

Desert Wildlife Management Area (DWMA): areas established in the NECO Plan Amendment to the CDCA Plan to address the recovery of the desert tortoise. They are intended to be areas where viable desert tortoise populations can be maintained (Category I habitat). These were eliminated in DRECP, and replaced by Desert Tortoise ACECs.

Distance Zones: A subdivision of the landscape as viewed from an observer position. The subdivision (zones) includes foreground-middleground, background, and seldom seen.

E

Equivalent Average Sound Pressure Level (Leq): The decibel level of a constant noise source that would have the same total acoustical energy over the same time interval as the actual time-varying noise condition being measured or estimated. Leq values must be associated with an explicit or implicit averaging time in order to have practical meaning.

Erosion: A natural process whereby soil and highly weathered rock materials are worn away and transported to another area, most commonly by wind or water.

Ethnographic Resources: Resources representing the heritage of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.

Excavation: The scientific examination of an archaeological site through layer-by-layer removal and study of the contents within prescribed surface units, e.g. square meters.

Expansive Soils: A soil which significantly changes its volume in horizontal and vertical planes with changes in moisture content.

F

Fault (active): A fault that has had surface displacement during Holocene time (last 11,000 years).

Fault (potentially active): A Quaternary-age (last 1.8 million years) fault that lacks evidence of Holocene-age displacement.

Fluvial: Of, relating to, or occurring in a river.

Form: The mass or shape of an object or objects which appear unified, such as a vegetative opening in a forest, a cliff formation, or a water tank.

G

Glare: The sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted, which causes annoyance, discomfort, or loss in visual performance and visibility. See Glint.

Glint: A momentary flash of light resulting from a spatially localized reflection of sunlight.

Greenhouse Gas (GHG): A gaseous compound that absorbs infrared radiation and re-radiates a portion of hat back toward the earth's surface, thus trapping heat and warming the earth's atmosphere.

H

Habitat: A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Hertz (Hz): A standard unit for describing acoustical frequencies measured as the number of air pressure fluctuation cycles per second. For most people, the audible range of acoustical frequencies is from 20 Hz to 20,000 Hz.

Historical Site: A location that was used or occupied after the arrival of Europeans in North America (ca. A.D. 1492). Such sites may consist of physical remains at archaeological sites or areas where significant human events occurred, even though evidence of the events no longer remains. They may have been used by people of either European or Native American descent.

Holocene: Of, denoting, or formed in the second and most recent epoch of the Quaternary period, which began 10,000 years ago at the end of the Pleistocene.

Hydrocarbons: Any organic compound containing only carbon and hydrogen, such as the alkanes, alkenes, alkynes, terpenes, and arenes.

I

Indian Tribe: Any American Indian group in the United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the Federal Register).

Invasive Species: An exotic species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13122, 2/3/99).

Isolate: Non-linear, isolated archaeological features without associated artifacts.

K

Key Observation Point (KOP): One or a series of points on a travel route or at a use area or a potential use area, where the view of a management activity would be most revealing.

L

Landscape Character: The arrangement of a particular landscape as formed by the variety and intensity of the landscape features and the four basic elements of form, line, color, and texture.

These factors give the area a distinctive quality which distinguishes it from its immediate surroundings.

Landscape Features: The land and water form, vegetation, and structures which compose the characteristic landscape.

Landslide: A slope failure that involves downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces.

Leasable Minerals: Minerals whose extraction from Federally managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands, potash, phosphate, sodium, and geothermal steam.

Line: The path, real or imagined, that the eye follows when perceiving abrupt differences in form, color, or texture. Within landscapes, lines may be found as ridges, skylines, structures, changes in vegetative types, or individual trees and branches.

Liquefaction: A condition in which a saturated cohesionless soil may lose shear strength because of a sudden increase in pore water pressure caused by an earthquake.

Locatable Minerals: Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

M

Maintenance Area: An area that currently meets Federal ambient air quality standards but which was previously designated as a nonattainment area. Federal agency actions occurring in a maintenance area are still subject to Clean Air Act conformity review requirements.

Mining Claim: A mining claim is a selected parcel of Federal Land, valuable for a specific mineral deposit or deposits, for which a right of possession has been asserted under the General Mining Law. This right is restricted to the development and extraction of a mineral deposit. The rights granted by a mining claim protect against a challenge by the United States and other claimants only after the discovery of a valuable mineral deposit. The two types of mining claims are lode and placer. In addition, mill sites and tunnel sites may be located to provide support facilities for lode and placer mining.

Mitigation: Mitigation includes: (a) Avoiding the impacts altogether by not taking an action or parts of an action, (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, (e) Compensating for the impact by replacing or providing substitute resources or environments (40 CFR §1508.20).

N

National Pollutant Discharge Elimination System (NPDES): The NPDES permit program has been delegated in California to the State Water Resources Control Board. These sections of the CWA require that an applicant for a Federal license or permit that allows activities resulting in a discharge to waters of the United States must obtain a state certification that the discharge complies with other provisions of the Clean Water Act.

National Register of Historic Places: The official list, established by the National Historic Preservation Act, of the Nation's cultural resources worthy of preservation. The National Register lists archeological, historic, and architectural properties (i.e. districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and Federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register.

Native American: Indigenous peoples of the western hemisphere.

Nitric Oxide (NO): A colorless toxic gas formed primarily by combustion processes that oxidize atmospheric nitrogen gas or nitrogen compounds found in the fuel. A precursor of ozone, nitrogen dioxide, numerous types of photochemically generated nitrate particles (including PAN), and atmospheric nitrous and nitric acids. Most nitric oxide formed by combustion processes is converted into nitrogen dioxide by subsequent oxidation in the atmosphere over a period that may range from several hours to a few days.

Nitrogen Dioxide: A toxic, reddish gas formed by the oxidation of nitric oxide. Nitrogen dioxide is a strong respiratory and eye irritant. Most nitric oxide formed by combustion processes is converted into nitrogen dioxide by subsequent oxidation in the atmosphere. Nitrogen dioxide is a criteria pollutant in its own right, and is a precursor of ozone, numerous types of photochemically generated nitrate particles (including PAN), and atmospheric nitrous and nitric acids.

Non-native Species: See Invasive Species.

Noxious Weed: According to the Federal Noxious Weed Act (PL 93-629), a weed that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agricultural and commerce of the United States and to the public health.

Nonattainment Area: An area that does not meet a Federal or state ambient air quality standard. Federal agency actions occurring in a Federal nonattainment area are subject to Clean Air Act conformity review requirements.

O

Off-Highway Vehicle (OHV): Any vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain, deriving motive power from any source other than muscle. OHVs exclude: 1) any non-amphibious registered motorboat; 2), any fire, emergency, or law enforcement vehicle while being used for official or emergency purposes; 3) any vehicle whose use is expressly authorized by a permit, lease, license, agreement, or contract issued by an authorized officer or otherwise approved; 4) vehicles in official use; and 5) any combat or combat support vehicle when used in times of national defense emergencies.

Organic Compounds: Compounds of carbon containing hydrogen and possibly other elements (such as oxygen, sulfur, or nitrogen). Major subgroups of organic compounds include hydrocarbons, alcohols, aldehydes, carboxylic acids, esters, ethers, and ketones. Organic compounds do not include crystalline or amorphous forms of elemental carbon (graphite, diamond, carbon black, etc.), the simple oxides of carbon (carbon monoxide and carbon dioxide), metallic carbides, or metallic carbonates.

Overdraft condition: A condition in which the total volume of water being extracted from the groundwater basin would be greater than the total recharge provided to the basin.

Ozone (O3): A compound consisting of three oxygen atoms. Ozone is a major constituent of photochemical smog that is formed primarily through chemical reactions in the atmosphere involving reactive organic compounds, nitrogen oxides, and ultraviolet light. Ozone is a toxic chemical that damages various types of plant and animal tissues and which causes chemical oxidation damage to various materials. Ozone is a respiratory irritant, and appears to increase susceptibility to respiratory infections. A natural layer of ozone in the upper atmosphere absorbs high energy ultraviolet radiation, reducing the intensity and spectrum of ultraviolet light that reaches the earth's surface.

P

Paleontological Resources (Fossils): The physical remains of plants and animals preserved in soils and sedimentary rock formations. Paleontological resources are for understanding past environments, environmental change, and the evolution of life.

Paleontology: A science dealing with the life forms of past geological periods as known from fossil remains.

Paleozoic Era: An era of geologic time (600 million to 280 million years ago) between the Late Precambrian and the Mesozoic eras and comprising the Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, and Permian periods.

Particulate Matter: Solid or liquid material having size, shape, and density characteristics that allow the material to remain suspended in the atmosphere for more than a few minutes. Particulate matter can be characterized by chemical characteristics, physical form, or aerodynamic properties. Categories based on aerodynamic properties are commonly described as being size categories, although physical size is not used to define the categories. Many components of suspended particulate matter are respiratory irritants. Some components (such as crystalline or fibrous minerals) are primarily physical irritants. Other components are chemical irritants (such as sulfates, nitrates, and various organic chemicals). Suspended particulate matter also can contain compounds (such as heavy metals and various organic compounds) that are systemic toxins or necrotic agents. Suspended particulate matter or compounds adsorbed on the surface of particles can also be carcinogenic or mutagenic chemicals. See PM_{10} and $PM_{2.5}$.

Peak Ground Acceleration (PGA): A common measure of ground motion during an earthquake. The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. Unlike measures of magnitude, which provide a single measure of earthquake energy, PGA varies from place to place, and is dependent on the distance from the epicenter and the character of the underlying geology (e.g. hard bedrock, soft sediments, or artificial fills).

Petroglyph: Pictures, symbols, or other art work pecked, carved, or incised on natural rock surfaces.

pH: a measure of the acidity or basicity of a water-based solution. Pure water is considered neutral with a pH of 7, while solutions with a pH less than 7 are said to be acidic and solutions with a pH greater than 7 are basic or alkaline.

Physiographic Province: An extensive portion of the landscape normally encompassing many hundreds of square miles, which portrays similar qualities of soil, rock, slope, and vegetation of the same geomorphic origin.

Pleistocene (Ice Age): An epoch in the Quaternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth's land.

Pliocene: The Pliocene Epoch is the period in the geologic timescale that extends from 5.332 million to 2.588 million years before present.

PM_{10} (inhalable particulate matter): A fractional sampling of suspended particulate matter that approximates the extent to which suspended particles with aerodynamic equivalent diameters smaller than 50 microns penetrate to the lower respiratory tract (tracheo-bronchial airways and alveoli in the lungs). In a regulatory context, PM_{10} is any suspended particulate matter collected by a certified sampling device having a 50 percent collection efficiency for particles with aerodynamic equivalent diameters of 9.5 to 10.5 microns and an maximum aerodynamic diameter collection limit less than 50 microns. Collection efficiencies are greater than 50 percent for particles with aerodynamic diameters smaller than 10 microns and less than 50 percent for particles with aerodynamic diameters larger than 10 microns.

$PM_{2.5}$ (fine particulate matter): A fractional sampling of suspended particulate matter that approximates the extent to which suspended particles with aerodynamic equivalent diameters smaller than 6 microns penetrate into the alveoli in the lungs. In a regulatory context, $PM_{2.5}$ is any suspended particulate matter collected by a certified sampling device having a 50 percent collection efficiency for particles with aerodynamic equivalent diameters of 2.0 to 2.5 microns and an maximum aerodynamic diameter collection limit less than 6 microns. Collection efficiencies are greater than 50 percent for particles with aerodynamic diameters smaller than 2.5 microns and less than 50 percent for particles with aerodynamic diameters larger than 2.5 microns.

Power Purchase Agreement (PPA): A contract between two parties, one who generates and intends to sell electricity, and one who is looking to purchase electricity, defining the commercial terms for the sale of electricity between the two parties.

Precursor: A compound or category of pollutant that undergoes chemical reactions in the atmosphere to produce or catalyze the production of another type of air pollutant.

Prehistoric: Refers to the period wherein American Indian cultural activities took place before written records and not yet influenced by contact with nonnative culture(s).

Q

Quaternary Age: The most recent of the three periods of the Cenozoic Era. In the geologic time scale of the International Commission on Stratigraphy, it follows the Tertiary Period, spanning time from approximately 2.6 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: the Pleistocene and the Holocene.

R

Record of Decision (ROD): A formal decision document issued by a Federal agency to record the decision for the public.

Rehabilitation: A management alternative and/or practice which restores landscapes to a desired scenic quality.

Riparian: Situated on or pertaining to the bank of a river, stream, or other body of water. Normally describes plants of all types that grow rooted in the water table or sub-irrigation zone of streams, ponds, and springs.

Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

Route: "Routes" represents a group or set of roads, trails, and primitive roads that represents less than 100 percent of the BLM transportation system. Generically, components of the transportation system are described as routes.

S

Saleable Minerals: Common variety minerals on the public lands, such as sand and gravel, which are used mainly for construction and are disposed by sales or special permits to local governments. See also Mineral Material Disposal.

Scale: The proportionate size relationship between an object and the surroundings in which the object is placed.

Scenery: The aggregate of features that give character to a landscape.

Scenic Area: An area whose landscape character exhibits a high degree of variety and harmony among the basic elements which results in a pleasant landscape to view.

Scenic Quality: The relative worth of a landscape from a visual perception point of view.

Scenic Quality Ratings: The relative scenic quality (A, B, or C) assigned a landscape by applying the scenic quality evaluation key factors; scenic quality A being the highest rating, B a moderate rating, and C the lowest rating.

Scenic Values: See Scenic Quality and Scenic Quality Ratings.

Secretary of the Interior: The U.S. Department of the Interior is in charge of the nation's internal affairs. The Secretary serves on the President's cabinet and appoints citizens to the National Park Foundation board.

Sedimentary Rocks: Rocks, such as sandstone, limestone, and shale, that are formed from sediments or transported fragments deposited in water.

Sensitivity Levels: Measures (e.g., high, medium, and low) of public concern for scenic quality.

Settlement: A process by which soils decrease in volume. Earthquake induced settlement results when relatively unconsolidated granular materials experience vibration associated with seismic events. Local settlement can occur when areas containing compressible soils are subject to foundation or fill loads.

Special-Status Species: Federal- or state-listed species, candidate or proposed species for listing, or species otherwise considered sensitive or threatened by state and Federal agencies.

State Historic Preservation Office (SHPO): The official within and authorized by each state at the request of the Secretary of the Interior to act as liaison for the National Historic Preservation Act.

State Implementation Plan (SIP): Legally enforceable plans adopted by states and submitted to USEPA for approval, which identify the actions and programs to be undertaken by the state and its subdivisions to achieve and maintain national ambient air quality standards in a time frame mandated by the Clean Air Act.

State Water Resources Control Board (SWRCB): Created in 1967, joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters. The mission of the nine Regional Water Quality Control Boards is to develop and enforce water quality objectives and implementation plans that will best protect the state's waters, recognizing local differences in climate, topography, geology, and hydrology.

Stratigraphy: The order and relative position of strata (a layer of rock in the ground) and their relationship to the geological time scale.

Subsurface: Of or pertaining to rock or mineral deposits which generally are found below the ground surface.

Sulfur Dioxide (SO_2): A pungent, colorless, and toxic oxide of sulfur formed primarily by the combustion of fossil fuels. It is a respiratory irritant, especially for asthmatics. A criteria pollutant in its own right, and a precursor of sulfate particles and atmospheric sulfuric acid.

T

Tertiary: The Tertiary Period marks the beginning of the Cenozoic Era. It began 65 million years ago and lasted more than 63 million years, until 1.8 million years ago. The Tertiary is made up of 5 epochs: the Paleocene Epoch, the Eocene Epoch, the Oligocene Epoch, the Miocene Epoch, and the Pliocene Epoch.

Texture: The visual manifestations of the interplay of light and shadow created by the variations in the surface of an object or landscape.

Total Dissolved Solids: A measure of the combined content of all *inorganic* and *organic* substances contained in a liquid that are smaller than two micrometers in diameter (e.g., sodium).

Toxic: Poisonous; exerting an adverse physiological effect on the normal functioning of an organism's tissues or organs through chemical or biochemical mechanisms following physical contact or absorption.

Traditional Cultural Properties: Areas associated with the cultural practices or beliefs of a living community. These sites are rooted in the community's history and are important in maintaining cultural identity.

Trail: A linear route managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Tribal Cultural Resource: Sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe.

V

Vandalism (Cultural Resource): Malicious damage or the unauthorized collecting, excavating, or defacing of cultural resources. Section 6 of the Archaeological Resources Protection Act states that "no person may excavate, remove, damage, or otherwise alter or deface any archaeological resource located on public lands or Indian lands…unless such activity is pursuant to a permit issued under section 4 of this Act."

Variables: Factors influencing visual perception including distance, angle of observation, time, size or scale, season of the year, light, and atmospheric conditions.

Variety: The state or quality of being varied and having the absence of monotony or sameness.

Viewshed: The landscape that can be directly seen under favorable atmospheric conditions, from a viewpoint or along a transportation corridor. Protection, rehabilitation, or enhancement is desirable and possible.

Visual Contrast: See Contrast.

Visual Quality: See Scenic Quality.

Visual Resources: The visible physical features on a landscape (e.g., land, water, vegetation, animals, structures, and other features).

Visual Resource Management Classes: Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape.

Visual Resource Management (VRM): The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives.

Visual Values: See Scenic Quality.

W

Wetlands: Permanently wet or intermittently water-covered areas, such as swamps, marshes, bogs, potholes, swales, and glades.

Wilderness Area: An area formally designated by Congress as part of the National Wilderness Preservation System as defined in the Wilderness Act of 1964 (78 Stat. 891), Section 2(c).

Wilderness Study Area: A roadless area or island that has been inventoried and found to have wilderness characteristics as described in Section 603 of FLPMA and Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891). The source for both of these is BLM's IMP and Guidelines for Lands Under Wilderness Review (December 1979).

Appendix C Appendix D

APPENDIX C
REFERENCES

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Appendix E Appendix C

Appendix D

APPENDIX D
APPLICABLE STATUTES, REGULATIONS, PLANS, AND STANDARDS

APPENDIX D - APPLICABLE STATUTES, REGULATIONS, PLANS, AND STANDARDS

D.1 INTRODUCTION

This appendix describes the Federal, state, and local statutes, regulations, plans, and standards that are applicable to each of the resources evaluated in Chapters 3 and 4 of the Desert Quartzite Solar Project (DQSP) California Desert Conservation Area (CDCA) Plan/Environmental Impact Statement/Environmental Impact Report (Draft PA/EIS/EIR).

D.2 AIR RESOURCES

Air quality in the Project area's air basin is regulated by Federal, state, and local regulatory agencies with the responsibility for maintaining ambient air quality within Federal and state standards. The Environmental Protection Agency (EPA) is the Federal agency responsible for establishing air quality regulations on a Federal level. The Federal Clean Air Act (CAA) and its subsequent amendments establish air quality regulations and the National Ambient Air Quality Standards (NAAQS), and delegate the enforcement of these standards to the states. In California, the California Air Resources Board (CARB) is responsible for enforcing air pollution regulations. The CARB has in turn delegated the responsibility of regulating stationary emission sources to regional air agencies. In the Project area's air basin, which is located in eastern Riverside County, the Mojave Desert Air Quality Management District (MDAQMD) has this responsibility.

The following sections summarize the air quality rules and regulations that apply to the Project.

D.2.1 Federal

The Federal CAA applies to all air emission sources and to all areas within the United States. Regulations adopted under the CAA that would apply to the Project would include the NAAQS as well as other requirements that have been adopted as part of the MDAQMD's Federally approved plans and programs.

Federal Emission Standards. The EPA has also adopted on-road and off-road engine emission reduction requirements, including Federal Exhaust and Evaporative Emission Standards for Light-Duty Vehicles and Light-Duty Trucks, Federal Emission Standards for Heavy-Duty and Non-road Engines, and other emission control programs that affect the Project's potential impacts to air quality through the phase-in of clean fuel and engine requirements.

General Conformity Rule. The General Conformity Rule (40 Code of Federal Regulations [CFR] Part 93) requires that Federal agencies demonstrate that Federal actions conform with the applicable State Implementation Plan (SIP) in order to ensure that Federal activities do not hamper local efforts to control air pollution. The EPA general conformity rule applies to Federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The *de minimis* emission thresholds are based on the attainment status of each air basin. Since the Project is located in an air basin that is designated attainment for all Federal criteria pollutants, it is not subject to the General Conformity emissions thresholds.

D.2.2 State

California Clean Air Act

The CCAA was signed into law in 1988 and, for the first time, clearly spelled out in statute California's air quality goals, planning mechanisms, regulatory strategies, and standards of progress. The CCAA provides the state with a comprehensive framework for air quality planning regulation. Prior to passage of the CCAA, Federal law contained the only comprehensive planning framework. As part of its authority within the state of California, and as allowed under the Federal CAA, CARB has established the California Ambient Air Quality Standards (CAAQS). The CAAQS are at least as stringent as the NAAQS. Both the NAAQS and CAAQS are shown in Table 3.2-3.

The CARB has oversight over air quality in the state of California. The CARB is responsible for the development of the SIP, which provides a framework for attaining and maintaining the NAAQS within the state of California. In turn, development of individual inputs to the SIP is the responsibility of local air pollution control agencies. Regulation of individual stationary sources has been delegated to local air pollution control agencies.

The CARB is responsible for developing programs designed to reduce emissions from non-stationary sources, including motor vehicles and off-road equipment, including heavy equipment for construction. Section 2449 specifies diesel fuel standards and diesel-powered vehicle idling times.

The CARB and the California Office of Environmental Health Hazard Assessment (OEHHA) are also responsible for developing regulations governing TACs. TACs include air pollutants that can cause serious illnesses or increased mortality, even in low concentrations. The CARB and OEHHA identify specific air pollutants as toxic air contaminants (TACs), develop health thresholds for exposure to TACs, and develop guidelines for conducting health risk assessments for sources of TAC emissions.

D.2.3 Local

Mojave Desert Air Quality Management District (MDAQMD)

As discussed above, the Project would be located in the jurisdiction of the MDAQMD. The MDAQMD is responsible for regulating stationary sources of air emissions in the Project area's air basin. Stationary sources that have the potential to emit air pollutants into the ambient air are subject to the Rules and Regulations adopted by the MDAQMD. The following MDAQMD rules are applicable to the Project (MDAQMD 2015).

Rule 401 – Visible Emissions. Rule 401 states that a person shall not discharge into the atmosphere, from any single source of emissions whatsoever, any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

- As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines, or
- Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection A [of the Rules].

Rule 402 - Nuisance. Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or

annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Rule 403 – Fugitive Dust. Rule 403 requires control of fugitive dust emissions during activities such as construction that have the potential to generate dust. The provisions of Rule 403 include the following:

1) A person shall not cause or allow the emissions of fugitive dust from any transport, handling, construction or storage activity so that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source. (Does not apply to emissions emanating from unpaved roadways open to public travel or farm roads. This exclusion shall not apply to industrial or commercial facilities).

2) A person shall take every reasonable precaution to minimize fugitive dust emissions from wrecking, excavation, grading, clearing of land and solid waste disposal operations.

3) A person shall not cause or allow particulate matter to exceed 100 micrograms per cubic meter ($\mu g/m^3$) when determined as the difference between upwind and downwind samples collected on high volume samplers at the property line for a minimum of five hours.

4) A person shall take every reasonable precaution to prevent visible particulate matter from being deposited upon public roadways as a direct result of their operations. Reasonable precautions shall include, but are not limited to, the removal of particulate matter from equipment prior to movement on paved streets or the prompt removal of any material from paved streets onto which such material has been deposited.

5) Subsections (a) and (c) shall not be applicable when the wind speed instantaneously exceeds 40 kilometers (25 miles) per hour, or when the average wind speed is greater than 24 kilometers (15 miles) per hour. The average wind speed determination shall be on a 15 minute average at the nearest official air-monitoring station or by wind instrument located at the site being checked.

6) The provisions of this rule shall not apply to agricultural operations.

Rule 403.2 – Fugitive Dust. Rule 403.2 applies to construction sites, including those on BLM land, and requires the owner or operator of any Construction/Demolition source to:

1) Use periodic watering for short-term stabilization of Disturbed Surface Area to minimize visible fugitive dust emissions. For purposes of this Rule, use of a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes shall be considered sufficient to maintain compliance;

2) Take actions sufficient to prevent project-related Trackout onto paved surfaces;

3) Cover loaded haul vehicles while operating on Publicly Maintained paved surfaces;

4) Stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than thirty days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate Visible Fugitive Dust emissions;

5) Cleanup project-related Trackout or spills on Publicly Maintained paved surfaces within twenty-four hours; and

6) Reduce non-essential Earth-Moving Activity under High Wind conditions. For purposes of this Rule, a reduction in Earth-Moving Activity when visible dusting occurs from moist and dry surfaces due to wind erosion shall be considered sufficient to maintain compliance.

Rule 403.2 also requires that the owner/operator of a Construction/Demolition source disturbing 100 or more acres shall, in addition to the provisions of subsection (2):

7) Prepare and submit to the MDAQMD, prior to commencing Earth-Moving Activity, a dust control plan that describes all applicable dust control measures that will be implemented at the project;

8) Provide stabilized access route(s) to the project site as soon as is feasible. For purposes of this Rule, as soon as is feasible shall mean prior to the completion of Construction/Demolition activity;

9) Maintain natural topography to the extent possible;

10) Construct parking lots and paved roads first, where feasible; and

11) Construct upwind portions of project first, where feasible.

Rule 404 – Particulate Matter Concentration. Rule 404 restricts emissions of particulate matter from any source based on the concentrations specified in Table 404(a) of this rule.

Rule 405 – Solid Particulate Matter Weight. Rule 405 restricts emissions of particulate matter from any source based on the concentrations specified in Table 405(a) of this rule.

Rule 406 – Specific Contaminants. Rule 406 restricts emissions of sulfur compounds to 500 ppm or less, and restricts emissions of halogens, which are not generally emitted from construction projects.

Rule 407 – Liquid and Gaseous Air Contaminants. Rule 407 restricts emissions of carbon monoxide to 2,000 ppm or less, on a dry-weight basis, over any period of 15 consecutive minutes.

Rule 408 – Circumvention. Rule 408 restricts the building, erection, installation or use of any equipment, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Chapter 3 (commencing with Section 41700) of Part 4, of Division 26 of the Health and Safety Code or of the MDAQMD Rules.

Rule 409 – Combustion Contaminants. Rule 409 restricts discharge into the atmosphere from the burning of fuel, combustion contaminants exceeding 0.23 gram per cubic meter (0.1 grain per cubic foot) of gas calculated to 12 percent of carbon dioxide (CO_2) at standard conditions averaged over a minimum of 25 consecutive minutes.

Rule 431 – Sulfur Content of Fuels. Rule 431 restricts the use of any gaseous fuel containing sulfur compounds in excess of 800 ppm calculated as hydrogen sulfide at standard conditions, or any liquid or solid fuel having a sulfur content in excess of 0.5 percent by weight.

Rule 442 – Usage of Solvents. Rule 442 restricts the emission of volatile organic compounds (VOCs) from any solvent material to 1,190 pounds per month, and requires proper storage and handling of VOC-containing solvents.

Riverside County General Plan

The Riverside County General Plan Air Quality Element (AQ) includes policies that limit emissions within the County boundaries. The goal is to support efforts to decrease region-wide pollution emissions, as surrounding jurisdictions significantly impact Riverside County's air quality. Policies were designed to establish a regional basis for improving air quality. The Riverside County General Plan's Air Quality Element (AQ) discusses the following applicable policies regarding air quality within Riverside County (Riverside County 2015a). Relevant countywide policies that address air quality within the County boundaries are also located in the Land Use Element (LU) of the County General Plan are also described below (Riverside County 2015a).

Air Quality Element

Policy AQ 2.1. The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible.

Policy AQ 2.2. Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.

Policy AQ 4.7. To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB [South Coast Air Basin], the Environmental Protection Agency and the California Air Resources Board.

Policy AQ 4.10. Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended.

Land Use Element

Policy LU 7.4. Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.

Policy LU 11.2. Ensure adequate separation between pollution producing activities and sensitive emission receptors, such as hospitals, residences, child care centers and schools.

D.3 BIOLOGICAL RESOURCES – VEGETATION

This section provides a discussion of Federal, state, and local environmental statutes, regulations, plans, and standards applicable to the Project for vegetation resources and Federal and state jurisdictional areas.

D.3.1 Federal

National Environmental Policy Act

NEPA (42 USC §4321 et seq.) declares a continuing Federal policy that directs "a systematic, interdisciplinary approach" to planning and decision-making and requires environmental statements for "major Federal actions significantly affecting the quality of the human environment." Implementing regulations by the CEQ (40 CFR Parts 1500-1508) requires Federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts. Federal agencies are further directed to emphasize significant environmental issues in project planning and to integrate impact studies required by other environmental laws and Executive Orders into the NEPA process. The NEPA process should therefore be seen as an overall framework for the environmental evaluation of Federal actions. The BLM is the Lead Agency under NEPA for the Project.

Executive Order 13112 – Invasive Species

Executive Order 13112 was signed in February 1999 and established the National Invasive Species Council. This Order requires agencies to identify actions that may affect the status of invasive species. It also directs Federal agencies not to authorize, fund, or carry out actions that they believe are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that the agency has prescribed, it has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

Plant Protection Act of 2000

The Plant Protection Act of 2000 (7 USC Ch. 104) established a Federal program to control the spread of noxious weeds. The Secretary of Agriculture is authorized to publish a list of plants designated as noxious weeds (7 USC §7712(f)). The movement of all such weeds in interstate or foreign commerce is prohibited except under permit.

Lacey Act, as amended

The Lacey Act (16 USC §§3371-3378) protects plants and wildlife by creating civil and criminal penalties for a wide variety of violations including illegal take, possession, transport or sale of protected species.

Federal Endangered Species Act

The FESA (16 USC §1531 et seq.) designates threatened and endangered species, both animal and plant species, and provides measures for their protection and recovery. "Take" of listed wildlife, and of listed plant species located on Federal land, is prohibited without obtaining a Federal permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife. Activities that damage

the habitat of (i.e., harm) listed wildlife species require approval from the USFWS for terrestrial species. The FESA also generally requires determination of critical habitat for listed species. If critical habitat has been designated, impacts to areas that contain the primary constituent elements identified for the species, whether or not it is currently present, is also prohibited. FESA §7 and §10 provide two pathways for obtaining authority to take listed species.

For projects proposed on Federal lands, Federal agencies, such as the BLM are required by the FESA to ensure that any action they authorize, implement, or fund, including energy developments, will not jeopardize the continued existence of any Federally threatened or endangered species or destroy or adversely modify designated critical habitat. In a §7 consultation, the lead agency (e.g., BLM) prepares a BA that analyzes whether the project is likely to adversely affect listed wildlife or plant species or their critical habitat, and proposes suitable avoidance, minimization, or compensatory mitigation measures. If the action may adversely affect the species, the USFWS then has 135 days to respond to the BA by issuing its BO determining whether the project is likely to jeopardize the species or result in adverse modification of critical habitat.

If a "nonjeopardy" or "no adverse modification" opinion is provided by the USFWS, the action agency may proceed with the action as proposed. If a jeopardy or adverse modification opinion is provided, the USFWS may prepare a BO with reasonable and prudent measures to minimize take and associated, mandatory terms and conditions that describe the methods for accomplishing the reasonable and prudent measures. In a BO that results in a jeopardy or adverse modification conclusion, the USFWS may develop mandatory reasonable and prudent alternatives to the proposed action.

BLM Sensitive Species

BLM Sensitive Species are species designated by the State Director that are not already Federally listed, proposed, or candidate species, or state listed because of potential endangerment. BLM's policy is to "ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered." Various offices of the BLM maintain a list of special-status plant and wildlife species that are to be considered as part of the management activities carried out by the BLM on the lands that they administer.

California Desert Conservation Area Plan, 1980 as Amended

The CDCA Plan guides the management of all BLM-administered lands in the Mojave, Sonoran, and a small portion of the Great Basin Deserts. In total, the CDCA Plan includes an area of approximately 25 million acres, 12 million of which are public lands. The primary goal of the CDCA Plan is to provide guidance for the overall maintenance of the land while simultaneously planning for multiple uses and balancing the human needs with the need to protect the natural environment.

The CDCA Plan includes 12 elements: Cultural Resources; Native American; Wildlife; Vegetation; Wilderness; Wild Horse and Burro; Livestock Grazing; Recreation; Motorized Vehicle Access; Geology, Energy and Mineral Resources; Energy Production and Utility Corridors; and Land-Tenure Adjustment. Each of the elements contains goals and specific actions for the management, use, development, and protection of the resources and public lands within the CDCA, and is based on the concepts of multiple use, sustained yield, and maintenance

of environmental quality. In addition, each element provides both a desert-wide perspective of the planning decisions for one major resource or issue of public concern as well as more specific interpretation of multiple-use class guidelines for a given resource and its associated activities.

Northern and Eastern Colorado Desert Coordinated Management Plan

The Northern and Eastern Colorado (NECO) Desert Coordinated Management Plan (BLM 2002), an amendment to the CDCA Plan, is a landscape-scale, multi-agency planning effort that protects and conserves the natural resources of the California portion of the Sonoran Desert while also managing its use for humans. This plan was prepared under the same regulations that implement the FLPMA of 1976. The NECO planning area of the CDCA spans 5.5 million acres in the southeastern California Desert, and covers the Project area. The NECO Plan Amendment to the CDCA Plan, which was adopted in December 2002, provides management direction for a variety of sensitive species and habitats on BLM and National Park Service land, as well as the U.S. Marine Corps Chocolate Mountain Aerial Gunnery Range.

The NECO Plan Amendment to the CDCA Plan primarily addresses recovery of the desert tortoise (*Gopherus agassizii*), conservation of a variety of other species, and modification of management of wild burro herds in the planning area, and updates policies regarding OHV use and public lands access and use. As part of its focus on desert tortoise recovery and sensitive species protection, the NECO Plan Amendment to the CDCA Plan has established several Desert Wildlife Management Areas, which cover much of the designated critical habitat for the desert tortoise. Specifically, these Wildlife Management Areas consist of a system of integrated ecosystem management for special-status species and natural communities on Federal lands, and regional standards and guidelines for public land health on BLM lands. The NECO Plan Amendment to the CDCA Plan also establishes several Wildlife Habitat Management Areas, which include habitat for desert bighorn sheep and other sensitive species in the planning area (BLM 2002).

California Desert Renewable Energy Conservation Plan

BLM issued the DRECP in October, 2016. The DRECP amends the CDCA Plan, specifically with respect to natural resource conservation and renewable energy development. The DRECP establishes Ecological and Cultural Conservation and Recreation Designations, and Renewable Energy Activities, Policies, and Allocations.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 USC §§661-666) applies to any Federal project where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with the USFWS and the appropriate state wildlife agency. These agencies prepare reports and recommendations that document project effects on wildlife and identify measures that may be adopted to prevent loss or damage to wildlife resources. The term "wildlife" includes both animals and plants. Provisions of the Act are implemented through the NEPA process and §404 permit process.

Clean Water Act (33 U.S.C. § 1251 et seq.)

The Clean Water Act (CWA) is the principal Federal statute protecting navigable waters and adjoining shorelines from pollution. The Clean Water Act is administered by the EPA and the United States Army Corps of Engineers (USACE). The USACE is responsible for regulating the discharge of fill material into waters of the United States. Waters of the United States include lakes, rivers, streams and their tributaries, as well as wetlands. Since its enactment, the CWA prohibits the discharge of pollutants into waters of the United States without a permit. Section 404 of the CWA provides that whenever any person discharges dredged or clean fill material into Waters of the United States including, without limitation, wetlands, streams, and bays (e.g., while undertaking road construction, bridge construction, or streambed alteration), a permit is required from the USACE. Through field reconnaissance surveys and analyses of National Wetlands Inventory (NWI) and watershed data, it is unlikely that there are any jurisdictional waters of the United States.

D.3.2 State

California Endangered Species Act

The CESA includes provisions for the protection and management of species listed by the state as endangered or threatened, or designated as candidates for such listings. CESA includes a requirement for consultation "to ensure that any action authorized by a state lead agency is not likely to jeopardize the continued existence of any endangered or threatened species… or result in the destruction or adverse modification of habitat essential to the continued existence of the species" (§ 2090). Plants of California declared to be endangered, threatened, or rare are listed at 14 California Code of Regulations (CCR) § 670.2. Animals of California declared to be endangered, threatened, or rare are listed at 14 CCR § 670.5. The administering agency for the above authority is the CDFW.

California Fish and Game Code Section 3503, 3511, 4700, 5050, and 5515

These California Fish and Game Code (FGC) sections list bird (primarily raptor), mammal, amphibian, and reptile species that are classified as fully protected in California. Fully protected species are prohibited from being taken or possessed except under specific permit requirements. These Codes also prohibit the take, possession, or needless destruction of the nests or eggs of any bird, including birds of prey or their nests or eggs, except as otherwise provided by the code or any regulation made pursuant thereto.

California Native Plant Protection Act

The California Native Plant Protection Act prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the California Native Plant Protection Act, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the California Native Plant Protection Act are not protected under CESA but rather under CEQA.

California Desert Native Plants Act

The California Desert Native Plants Act protects certain species of California desert native plants from unlawful harvesting on both public and privately owned lands. The law applies in the counties of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego. Within these counties, the CDNPA prohibits the cutting, removal, sale, or possession of specific native desert plants unless a person has a valid permit or wood receipt, and the required tags and seals. The appropriate permits, tags and seals must be obtained from the sheriff or commissioner of the county where collecting will occur, and the county will charge a fee.

The following plant species inventoried in the Project area fall under the jurisdiction of this law: desert lily (*Hesperocallis undulata*), silver cholla (*Cylindropuntia echinocarpa*), California barrel cactus (*Ferocactus cylindraceus*); common fishhook cactus (*Mammillaria tetrancistra*), microphyll woodland trees; ironwood (*Olneya tesota*), blue palo verde (*Parkinsonia florida*), honey mesquite (*Prosopis glandulosa*).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act provides state coordination with the CWA, which is described above. It provides a mechanism by which the Regional Water Quality Control Boards certify that Federal actions that result in a discharge to waters, including Federally issued CWA permits to ensure the compatibility of Federal and state water quality guidelines, are in compliance with Section 401 of the CWA, which requires such Federal actions to comply with state water quality standards. The act provides for the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters. Basin plans are primarily implemented by using the National Pollution Discharge Elimination System permitting system to regulate waste discharges to ensure that water quality objectives are met. Waste discharges may include fill, any material resulting from human activity, or any other "discharge" that may directly or indirectly impact Waters of the State relative to the implementation of Section 401 of the CWA. Waters regulated under Porter-Cologne include isolated waters that are no longer regulated by USACE. Developments which impact jurisdictional waters must demonstrate compliance with the goals of the Act by developing SWPPPs, Standard Urban Storm Water Mitigation Plans, and other measures in order to obtain a CWA §401 certification.

California Fish and Game Code Sections 1600-1616 – Streambed Alteration Agreement

This Code requires that any person, state or local government agency, or public utility notify the CDFW and obtain a streambed alteration agreement before they begin any construction project that will divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake, use materials from a streambed, or result in the disposal or disposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake. In general, CDFW jurisdiction extends to the top of the stream or bank, or to the outer edge of riparian vegetation, whichever is wider.

D.3.3 Local

Riverside County General Plan

The Riverside County General Plan (Riverside County 2015a) includes policies that address biological resources within the County boundaries. Countywide policies that seek to preserve biological resources are located in the Land Use Element and Open Space Element of the County General Plan, and include:

Land Use Element (LU)

Policy LU 9.2. Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and Federal and state regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act.

D.4 BIOLOGICAL RESOURCES – WILDLIFE

The Project must comply with various Federal, state, and local laws. While some laws and policies provide constraints, others provide intent and direction for certain actions to occur. The following is a general overview of such guidance, which gives intent or direction for the proposed Project relevant to wildlife resources.

D.4.1 Federal

National Environmental Policy Act

NEPA (42 USC 4321 et seq.) declares a continuing Federal policy that directs "a systematic, interdisciplinary approach" to planning and decision-making and requires environmental statements for "major Federal actions significantly affecting the quality of the human environment." Implementing regulations by the CEQ (40 CFR Parts 1500-1508) requires Federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environmental and avoid or minimize adverse environmental impacts. Federal agencies are further directed to emphasize significant environmental issues in project planning and to integrate impact studies required by other environmental laws and Executive Orders into the NEPA process. The NEPA process should therefore be seen as an overall framework for the environmental evaluation of Federal actions. The BLM is the Lead Agency under NEPA for the Project.

Federal Endangered Species Act

The ESA includes provisions for protection and management of species that are Federally listed as threatened or endangered or proposed for such listing and of designated critical habitat for these species. The administering agency for the above authority for non-marine species is the USFWS.

BLM Sensitive Species

BLM Sensitive Species are species designated by the State Director that are not already Federally listed, proposed, or candidate species, or state-listed because of potential

endangerment. BLM's policy is to "ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered." Various offices of the BLM maintain a list of special-status plant and wildlife species that are to be considered as part of the management activities carried out by the BLM on the lands that they administer.

California Desert Conservation Area Plan, 1980 as Amended

The CDCA Plan guides the management of all BLM-administered lands in the Mojave, Sonoran, and a small portion of the Great Basin Deserts. In total, the CDCA Plan includes an area of approximately 25 million acres, 12 million of which are public lands. The primary goal of the CDCA Plan is to provide guidance for the overall maintenance of the land while simultaneously planning for multiple uses and balancing the human needs with the need to protect the natural environment.

The CDCA Plan includes 12 elements: Cultural Resources; Native American; Wildlife; Vegetation; Wilderness; Wild Horse and Burro; Livestock Grazing; Recreation; Motorized Vehicle Access; Geology, Energy and Mineral Resources; Energy Production and Utility Corridors; and Land-Tenure Adjustment. Each of the elements contains goals and specific actions for the management, use, development, and protection of the resources and public lands within the CDCA, and is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. In addition, each element provides both a desert-wide perspective of the planning decisions for one major resource or issue of public concern as well as more specific interpretation of multiple-use class guidelines for a given resource and its associated activities.

Northern and Eastern Colorado Desert Coordinated Management Plan

The NECO Plan Amendment to the CDCA Plan (BLM 2002) is a landscape-scale, multi-agency planning effort that protects and conserves the natural resources of the California portion of the Sonoran Desert while also managing its use for humans. This plan was prepared under the same regulations that implement the FLPMA of 1976. The NECO planning area of the CDCA spans 5.5 million acres in the southeastern California Desert, and covers the Project area. The NECO Plan Amendment to the CDCA Plan, which was adopted in December 2002, provides management direction for a variety of sensitive species and habitats on BLM and National Park Service land, as well as the U.S. Marine Corps Chocolate Mountain Aerial Gunnery Range.

The NECO Plan Amendment to the CDCA Plan primarily addresses recovery of the Mojave desert tortoise (*Gopherus agassizii*), conservation of a variety of other species, and modification of management of wild burro herds in the planning area, and updates policies regarding OHV use and public lands access and use. As part of its focus on Mojave desert tortoise recovery and sensitive species protection, the NECO Plan Amendment to the CDCA Plan has established several Desert Wildlife Management Areas, which cover much of the designated critical habitat for the Mojave desert tortoise. Specifically, these Wildlife Management Areas consist of a system of integrated ecosystem management for special-status species and natural communities on Federal lands, and regional standards and guidelines for public land health on BLM lands. The NECO Plan Amendment to the CDCA Plan also establishes several Wildlife Habitat Management Areas, which include habitat for desert bighorn sheep and other sensitive species in the planning area (BLM 2002; Figure 3.4-10).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) includes provisions for protection of migratory birds, including basic prohibitions against any taking not authorized by Federal regulation. The administering agency for the above authority is the USFWS. The law contains no requirement to prove intent to violate any of its provisions. Wording in the MBTA makes it clear that most actions that result in "taking" or possession (permanent or temporary) of a protected species can be a violation of the act. The word "take" is defined as "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (including nests, eggs, and feathers)."

Lacey Act

The Lacey Act, as amended (16 USC 3371-3378) protects plants and wildlife by creating civil and criminal penalties for a wide variety of violations including illegal take, possession, transport, or sale of protected species.

The Bald and Golden Eagle Protection Act

Bald eagle protection began in 1940 with the passage of the Eagle Protection Act, which was later amended to include golden eagle and was renamed. The Bald and Golden Eagle Protection Act makes it unlawful to import, export, take, sell, purchase, or barter any bald eagle or golden eagle, their parts, products, nests, or eggs. Take includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing. Exceptions may be granted by USFWS for scientific or exhibition use, or for traditional and cultural use by Native Americans. However, no permits may be issued for import, export, or commercial activities involving eagles.

Wild Horse and Burro Act of 1971, as amended

Herd Areas are those geographic areas where wild horses and/or burros were found at the time of the passage of the Wild Horse and Burro Act in 1971. Herd Management Areas are those areas within Herd Areas where the decision has been made, through Land Use Plans, to manage for populations of wild horses and/or burros. Herd Areas boundaries may only be changed when it is determined that areas once listed as Herd Areas are later found to be used only by privately owned horses or burros, or the Herd Area boundary does not correctly portray where wild horses and burros were found in 1971.

California Desert Renewable Energy Conservation Plan

BLM issued the DRECP in October, 2016. The DRECP amends the CDCA Plan, specifically with respect to natural resource conservation and renewable energy development. The DRECP establishes Ecological and Cultural Conservation and Recreation Designations, and Renewable Energy Activities, Policies, and Allocations.

D.4.2 State

California Endangered Species Act

The CESA includes provisions for the protection and management of species listed by the state as endangered or threatened, or designated as candidates for such listings. CESA includes a requirement for consultation "to ensure that any action authorized by a state lead agency is not likely to jeopardize the continued existence of any endangered or threatened species… or result in the destruction or adverse modification of habitat essential to the continued existence of the species" (§ 2090). Plants of California declared to be endangered, threatened, or rare are listed at 14 California Code of Regulations (CCR) § 670.2. Animals of California declared to be endangered, threatened, or rare are listed at 14 CCR § 670.5. The administering agency for the above authority is the CDFW.

Other Provisions of the California Fish and Game Code

These California Fish and Game Codes (CFGC) list bird (primarily raptor), mammal, amphibian, and reptile species that are classified as fully protected in California. Fully protected species are prohibited from being taken or possessed except under specific permit requirements. These Codes also prohibit the take, possession, or needless destruction of the nests or eggs of any bird, including birds of prey or their nests or eggs, except as otherwise provided by the code or any regulation made pursuant thereto.

D.4.3 Local

Riverside County General Plan

The Riverside County General Plan (Riverside County 2015a) includes policies that address biological resources within the County boundaries. Countywide policies that seek to preserve biological resources are located in the Land Use Element and Open Space Element of the County General Plan, and include:

Land Use Element (LU)

Policy LU 9.2. Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and Federal and state regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act.

D.5 CULTURAL RESOURCES

D.5.1 Federal

There are numerous Federal regulations, executive orders, and policies that direct management of cultural resources on Federal lands and by Federal agencies. These include NEPA, the NHPA, the Archaeological Resources Protection Act (ARPA), the NAGPRA, the American Indian Religious Freedom Act (AIRFA), Executive Order 13007, and the Antiquities Act. The following is a discussion of the most pertinent laws affecting the proposed Project.

National Environmental Policy Act

NEPA (42 U.S.C. §§ 4321-4346) establishes national policy for the protection and enhancement of the environment. Part of the function of the Federal government in protecting the environment is to "preserve important historic, cultural, and natural aspects of our national heritage." The act is implemented by the Council on Environmental Quality (CEQ) regulations at 40 CFR Parts 1500-1508. Refer to Sections 1.3 and 1.4 for more information regarding NEPA as it relates to this Project.

National Historic Preservation Act

The National Historic Preservation Act (NHPA), as amended (54 U.S.C. § 100101 et seq.), is the principal Federal law in the United States protecting cultural resources. Section 106 of the NHPA directs all Federal agencies to take into account the effects of their undertakings (i.e., actions, financial support, and authorizations) on properties included in or eligible for inclusion in the NRHP and to allow the ACHP an opportunity to comment. ACHP regulations at 36 CFR Part 800 implement Section 106 of the NHPA. These regulations establish the NRHP as a planning tool to help Federal agencies evaluate cultural resources in consultation with the SHPO, Native American tribes, and other interested parties. The criteria for determining whether cultural resources are eligible for listing in the NRHP are provided in 36 CFR Part 60.4. These criteria are:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

A) Are associated with events that have made a significant contribution to the broad patterns of our history;

B) Are associated with the lives of persons significant in our past;

C) Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction; or

D) Have yielded, or may be likely to yield, information important in prehistory or history.

A cultural resource that is eligible for the NRHP is called a historic property regardless of the time period to which it dates. To be listed in, or determined eligible for, the NRHP a cultural resource must meet one or more of the above criteria and possess integrity. Integrity is defined as the authenticity of a resource's historic identity as evidenced by the survival of physical characteristics that existed during the prehistoric or historic period of use. The NRHP recognizes seven aspects, which in various combinations define integrity: location, design, setting, materials, workmanship, feeling, and association. Integrity of location means that the resource has not been moved from its historic location. Integrity of design, materials, and workmanship mean that the resource's original building materials, plan, shape, and design elements remain intact. Integrity of setting means that the surrounding landscape has changed very little since the period of importance for the resource. Integrity of feeling and association means the resource retains a link to an earlier time and place and is able to evoke that era. Historic properties must generally be at least 50 years old; however, a younger resource may be considered eligible if it is of exceptional importance.

An undertaking results in adverse effects, or impacts, to a historic property (i.e., a cultural resource eligible to or listed in the NRHP) when it alters the resource's characteristics, including relevant features of its environment or use that qualify it for inclusion in the NRHP. Potential effects could include (36 CFR Part 800.5(a) (2)):

- Physical destruction, damage, or alteration of all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68);
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
- Neglect of a property resulting in its deterioration or destruction; and
- Transfer, lease, or sale of the property.

Compliance with NHPA Section 106 is required whenever a project has a Federal nexus, meaning that the project is on Federal land, uses Federal funds, or is permitted by a Federal agency. The BLM is reviewing an application for and will make a decision on issuing a new ROW grant for the proposed solar facility and gen-tie line. This activity constitutes an undertaking as defined in 36 CFR Part 800.16(y) and requires compliance with Section 106.

Antiquities Act

The Antiquities Act of 1906 (16 U.S.C. § 431-433) was the first law to protect and preserve cultural resources on Federal lands. It makes it illegal to remove cultural resources from Federal lands without a permit and establishes penalties for illegal excavation and looting. The Archaeological Resources Protection Act (see below) reinforces and replaces portions of the Antiquities Act as the authority for special use permits regarding archaeological investigations.

Federal Land Policy and Management Act, 1976 as Amended

The FLPMA (43 U.S.C. § 1701) requires the BLM to manage its lands on the basis of multiple use in a manner that will "protect the quality of...historical...resources and archaeological values." FLPMA is a comprehensive law that provides for the periodic inventory of public lands and resources, for long-range, comprehensive land use planning, for permits to regulate the use of public lands, and for the enforcement of public land laws and regulations. FLPMA compels agencies to manage all cultural resources on public lands through the land management planning process.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) of 1979 (16 U.S.C. § 470 aa-mm) establishes civil and criminal penalties for the unauthorized excavation, removal, damage,

alteration, or defacement of archaeological resources; prohibits trafficking in resources from public lands; and directs Federal agencies to establish educational programs on the importance of archaeology. The act also establishes permit requirements for removal or excavation of archaeological resources from Federal lands. The law applies to archaeological resources more than 100 years old found on public lands. No distinction is made regarding NRHP eligibility.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 requires Federal agencies to consult Native American groups when a proposed land use might conflict with traditional Indian religious beliefs or practices; to avoid interference with these beliefs to the extent possible; and to maintain access to religious or sacred areas whenever feasible.

Executive Order 11593, Protection and Enhancement of the Cultural Environment

Issued in 1971, Executive Order 11593 directs land-holding Federal agencies to identify and nominate historic properties to the NRHP and requires that these agencies avoid damaging historic properties that might be eligible to the NRHP. It also directs agencies to treat resources eligible for listing in the NRHP as if they were already listed.

Executive Order 13007, Indian Sacred Sites

Executive Order 13007, issued in 1996, directs Federal agencies responsible for managing Federal lands to accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners; avoid adversely affecting the physical integrity of such sacred sites; and maintain the confidentiality of sacred sites.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments

Executive Order 13175, issued in 2000, directs Federal agencies to establish regular and meaningful consultation and collaboration with Tribal officials in the development of Federal policies that have Tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes.

Executive Order 13287, Preserve America

This Executive Order, issued in 2003, encourages the Federal government to take a leadership role in the protection, enhancement, and contemporary use of historic properties and establishes new accountability for agencies with regard to inventories and stewardship.

Memorandum for the Heads of Executive Departments and Agencies Regarding Government-to-Government Relations with Native American Tribal Governments

The Presidential memorandum, issued in 2009, directs each Federal agency to operate within a government-to-government relationship with Federally recognized Tribal governments; consult with Tribal governments; assess the impact of plans, projects, programs, and activities on Tribal

trust resources; and ensure that Tribal rights are taken into account during consideration of such plans, projects, and activities.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (25 U.S.C. § 3001) provides a process for Federal agencies to return certain Native American cultural items—human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants and culturally affiliated Indian tribes. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items, intentional excavation and unanticipated discovery of Native American cultural items on Federal lands, and penalties for noncompliance and illegal trafficking. Permits for the excavation or removal of cultural items protected by the act require Tribal consultation, as do discoveries of cultural items made during activities on Federal lands. The Secretary of the Interior's implementing regulations are at 43 CFR Part 10.

D.5.2 State

CEQA

The principal state law relevant to the protection of cultural resources within the 160 acres of privately owned land is CEQA, with particular reference to California PRC 21083.2 to 21084.1, which addresses historical resources, unique archaeological resources, and Native American human remains.

Section 5097.5 of the PRC specifies that any unauthorized disturbance or removal of archaeological and historical resources located on public lands is a misdemeanor. This Section also prohibits the knowing destruction of objects of antiquity without a permit (expressed permission) on public lands, and provides for criminal sanctions. In addition, Section 30244 of the PRC requires reasonable mitigation for adverse impacts on archaeological resources as identified by the SHPO. Further, California Penal Code, Section 622.5, provides misdemeanor penalties for willfully injuring or destroying objects of historic or archaeological interest located on public or private lands, but specifically excludes the landowner.

Historical Resources

Lead agencies are required to identify historical resources that may be affected by any undertaking involving state or county lands, funds, or permitting. Also, the significance of such resources that may be affected by the undertaking must be evaluated using the criteria for listing in the CRHR (PRC §5024.1, Title 14 CCR, Section 4852). Under CEQA, a resource is considered historically significant if the resource satisfies any of the following criteria:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR (PRC §5024.1, Title 14 CCR, Section 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless

the preponderance of evidence demonstrates that it is not historically or culturally significant.

3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (PRC §5024.1, Title 14 CCR, Section 4852) including the following:

   A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

   B) Is associated with the lives of persons important in our past;

   C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

   D) Has yielded, or may be likely to yield, information important in prehistory or history.

4. The fact that a resource is not listed in, or determined to be eligible for listing in, the CRHR, not included in a local register of historical resources (pursuant to section 5020.1(k) of the PRC), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

Resources already listed or determined eligible for the NRHP and CHL (No. 770 and above) are by definition eligible for the CRHR. Historical resources included in resource inventories prepared according to California State Office of Historic Preservation (OHP) guidelines or designated under county or city historic landmark ordinances may be eligible.

For a resource to be eligible for the CRHR, it must satisfy each of the following three standards:

1. A property must be significant at the local, state or national level, under one or more of the following criteria:

   a. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States.

   b. It is associated with the lives of persons important to the nation or California's past.

   c. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

   d. It has yielded, or may be likely to yield, information important to the prehistory or history of the state or the nation:

2. A resource must retain enough of its historic character or appearance to be recognizable as a historic property, and to convey the reasons for its significance; and
3. It must be fifty years old or older (except for rare cases of structures of exceptional significance).

Integrity is defined as the authenticity of a historical resource's physical identity, evidenced by the survival of characteristics that existed during the resource's period of significance. CRHR regulations specify that integrity is a quality that applies to historical resources in seven ways: location, design, setting, materials, workmanship, feeling, and association.

Unique Archaeological Resources

Lead agencies must also determine whether a proposed project will have a significant effect on unique archaeological resources. PRC 21083.2(g) states:

"…a 'unique archaeological resource' means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

A non-unique archaeological resource does not meet these criteria and does not need to be given further consideration other than simple recording, unless it happens to qualify as a historical resource.

Native American Human Remains

The state CEQA Guidelines (Section 15064.5 (d)) provide that when an initial study identifies the existence of, or probable likelihood of, Native American human remains within the Project, a lead agency will work with the appropriate Native Americans as identified by the NAHC.

Native American Consultation

Pursuant to Senate Bill (SB) 18 (California Government Code §65352.3), local governments are required to consult with California Native American tribes identified by the NAHC for the purpose of protecting and/or mitigating impacts to cultural places. SB 18 requires formal consultation with Native American tribes as part of a project that enacts or amends a general plan or specific plan. The proposed Project would not require a general plan or specific plan amendment; therefore, SB 18 does not apply to the proposed Project. However, as described above, Native American Coordination has been initiated with Native American groups with historic ties to, and interest in, the proposed Project area.

Assembly Bill (AB) 52 (PRC Section 5097.94, 21073, 21074, 21080.3.2, 21082.3, 21083.09, and 21084.3) requires the lead agency of a project to consult with interested California Native

American tribes that have a traditional or cultural affiliation with the project area for projects with a NOP after July 1, 2015. Tribes must notify the lead agency in writing that they are interested in consulting on projects within a particular geographic area. Lead agencies must then notify the interested California Native American tribes about the proposed Project prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report will be prepared. AB 52 also provides recognition of tribal cultural resources in the CEQA process. This category of resources includes sites, features, places, landscapes, and objects that are essential to traditional cultural values, heritages, and identities of California Native Americans. Some of the preferred mitigation measures included in AB 52 are preservation in place, a conservation easement, or to incorporate the resource within a park or open space. AB 52 specifies that it is applicable to projects that have a NOP or a notice of negative declaration filed or mitigated negative declaration on or after July 1, 2015. Because the date of the NOP for the DQSP was March 12, 2015, AB 52 is not applicable to the Project.

D.5.3 Local

Riverside County General Plan- Multipurpose Open Space Element

The Multipurpose Open Space Element of the Riverside County General Plan (Riverside County 2015a) outlines policies intended to promote the preservation of cultural resources in the County of Riverside, as follows:

OS 19.3 - Review proposed development for the possibility of cultural resources and for compliance with the cultural resources program.

OS 19.5 - Exercise sensitivity and respect for human remains form both prehistoric and historic time periods and comply with all applicable laws concerning such remains.

D.6 ENVIRONMENTAL JUSTICE

D.6.1 Federal

Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 (Public Law 88-352, 78 Stat.241) prohibits discrimination on the basis of race, color, or national origin in all programs or activities receiving Federal financial assistance.

Executive Order 12898

Executive Order 12898, "Federal Actions to address environmental justice in Minority Populations and Low-Income Populations," focuses Federal attention on the environment and human health conditions of minority communities and calls on agencies to achieve environmental justice as part of this mission (59 FR 7629). The order requires the USEPA and all other Federal agencies (as well as state agencies receiving Federal funds) to develop strategies to address this issue. The agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations.

Council on Environmental Quality

The CEQ has oversight responsibility for the Federal Government's compliance with Executive Order 12898 and NEPA. The CEQ, in consultation with the USEPA and other agencies, has developed guidance to assist Federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. According to the CEQ's *Environmental Justice Guidance Under the National Environmental Policy Act* (CEQ 1997), agencies should consider the composition of the affected area to determine whether minority populations or low-income populations are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse environmental effects.

Environmental Protection Agency (EPA) Final Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses

The EPA's Final Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses defines how the EPA will ensure that disproportionately high and adverse human health or environmental effects on minority communities and low-income communities are identified and addressed. It establishes agency-wide goals for engaging American Indian, Alaska Native, Native Hawaiian, and other indigenous peoples. It also establishes agency-wide goals for environmental protection and lists actions the EPA would take to incorporate environmental justice into its mission (EPA 1998).

Environmental Protection Agency Plan Environmental Justice 2014

The EPA's Plan Environmental Justice (EJ) 2014 is a strategy to help the agency integrate environmental justice into its programs, policies, and activities. Plan EJ 2014 identifies Cross-Agency Focus Areas, Tools Development, and Program Initiatives as the three essential elements that will advance environmental justice across the EPA and other agencies of the Federal government.

BLM Land Use Planning Handbook (H-1601-1)

BLM Land Use Planning Handbook, H-1601-1, Appendix D, Section IV (Environmental Justice Requirements) provides guidance for assessing potential impacts on population, housing, and employment as they relate to environmental justice. It also describes variables such as lifestyles, beliefs and attitudes, and social organizations with respect to environmental justice. These variables were not evaluated in this analysis, as they are cannot be readily quantified for the purposes of impact assessment and do not provide any additional analytical value in terms of evaluating potential environmental justice impacts.

D.6.2 State

No state statutes, regulations, plans, or standards related to environmental justice would be applicable to the DQSP.

D.7 GEOLOGY AND SOIL RESOURCES

D.7.1 Federal

International Building Code

The International Building Code (IBC) is published by the International Code Council (ICC) and is the national model building code. The 2018 IBC, published in August, 2017, is the most recent edition of the International Building Code, and applies to all structures currently being constructed in California (ICC 2017). The national model codes are incorporated by reference into the building codes of local municipalities, such as the California Building Code (CBC) and County of Riverside Building Code as discussed below.

D.7.2 State

California Building Code

The CBC is promulgated under the CCR, Title 24, Parts 1 through 12 (also known as the California Building Standards Code), and is administered by the California Building Standards Commission. The Project is subject to the applicable sections of the CBC updated most recently in January, 2017. The Riverside County Building Department is responsible for implementing the CBC for the Project. The Project would comply with applicable seismic design and construction criteria of the most recent CBC and American Society of Civil Engineers (ASCE) Minimum Design Loads for Buildings and Other Structures (ASCE 7-05).

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act) signed into law in December of 1972, requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Fault Zoning Act is to regulate development on or near active fault traces to reduce the hazard of potential fault rupture and to prohibit the location of structures for human occupancy across these traces. Cities and counties must regulate certain development projects within the zones, which includes withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement (Hart and Bryant 2007). The Project is not subject to this act because it is not within an earthquake fault zone. Nevertheless, this act is included in the regulatory framework because it requires the State of California to identify and disseminate information about the location of earthquake fault zones, which is considered relevant to the environmental setting.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate "zones of required investigation" (i.e., seismic hazard zones) where site investigations are required to determine the need for mitigation of potential liquefaction and/or earthquake-induced landslide ground displacements. The act requires cities, counties, and other local permitting agencies to regulate certain development projects by implementing the provisions of the act through various local

building codes, permits, and ordinances. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design, consistent with CGS Special Publication 117, *Guidelines for Evaluating and Mitigating Seismic Hazards in California.* Because the CGS has not established seismic hazard zones for the Project area, the Applicant is not required to comply with the evaluation and mitigation guidelines. Nevertheless, this act is included in the regulatory framework because it requires the State of California to identify and disseminate information about seismic hazards, which is considered relevant to the environmental setting.

D.7.3 Local

Riverside County General Plan – Palo Verde Valley Area Plan

Portions of the Palo Verde Valley planning area may be subject to seismic hazards. Threats from seismic events include ground shaking, fault rupture, liquefaction, and landslides. In the Palo Verde Valley planning area, liquefaction poses the most significant threat from a seismic event. Generally, the use of building techniques and practical avoidance measures help mitigate potentially dangerous seismic events. The Palo Verde Valley Area Plan (PVVAP) provides the policy related to seismic hazards below.

PVVAP 15.1. Protect life and property from seismic related incidents through adherence to the Seismic Hazards section of the General Plan Safety Element.

D.8 GREENHOUSE GAS EMISSIONS AND GLOBAL CLIMATE CHANGE

On a national scale, Federal agencies are addressing emissions of GHGs by reductions mandated in Federal laws and Executive Orders. Several states have promulgated laws as a means to reduce statewide levels of GHG emissions. In particular, the California Global Warming Solutions Act of 2006 directs the State of California to reduce statewide GHG emissions to 1990 levels by the year 2020.

D.8.1 Federal

National Fish, Wildlife, and Plants Climate Adaptation Strategy

The National Fish, Wildlife, and Plants Climate Adaptation Strategy outline the first joint effort of three levels of government (Federal, state, and tribal) with primary authority and responsibility for the living resources within the United States. The intent of the strategy is to identify how these resources can become more resilient, adapt to, and survive a warming climate.

Environmental Protection Agency Endangerment Finding

Recent actions by the EPA have allowed for the regulation of GHGs. On April 17, 2009, the EPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the EPA Administrator signed and finalized two distinct findings regarding greenhouse gases under Section 202(a) of the Clean Air Act:

Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.

Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution that threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009 and adopted on April 1, 2010. As finalized in April 2010, the emissions standards rule for vehicles will improve average fuel economy standards to 35.5 miles per gallon by 2016. In addition, the rule will require model year 2016 vehicles to meet an estimated combined average emission level of 250 grams of CO_2 per mile.

On March 10, 2009, in response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), the EPA proposed a rule that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of Greenhouse Gases Rule was signed, and it was published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. The rule will collect accurate and comprehensive emissions data to inform future policy decisions.

The EPA is requiring suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to the EPA. The gases covered by the proposed rule are CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, and other fluorinated gases, including nitrogen trifluoride (NF_3) and hydrofluorinated ethers (HFE).

D.8.2 State

The State of California enacted some of the first legislation in the United States to regulate GHGs. The following subsections describe regulations and standards that have been adopted by the State of California to address GHG emissions.

Western Climate Initiative

California is part of the Western Climate Initiative (WCI), an effort of the western states and Canadian provinces to establish a cap and trade market to reduce GHG emissions in the Western United States with offsets in Canada and other countries. WCI adopted a goal of an aggregate reduction of 15 percent below 2005 GHG levels by 2020. It has voluntarily prepared a GHG inventory based on calendar year 2004, as well as a set of rules for Climate Change (Regulation XXVII), including the Southern California Climate Solutions Exchange (Rule 2701), and the Greenhouse Gas Reduction Program (Rule 2702). California's Cap-and-Trade program helps to ensure that emissions continually decline, even alongside stronger economic growth and potentially drier hydrological conditions, and in the event of any additional unforeseen circumstances. The 2014 edition GHG inventory represents a transition to global warming

potentials (GWPs) derived from the Intergovernmental Panel on Climate Change (IPCC) 4th Assessment Report (AR4). Previous GHG inventories relied on GWPs from IPCC's Second Assessment Report (SAR).

California Code of Regulations Title 24

Although not originally intended to reduce GHG emissions, Title 24 of the California Code of Regulations, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow for the consideration and possible incorporation of new energy efficiency technologies and methods. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency results in decreased GHG emissions.

The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008 and standards are currently being phased in.

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions below 1990 levels by 2050. Executive Order S-3-05 also calls for the California EPA to prepare biennial science reports on the potential impact of continued global climate change on certain sectors of the California economy. The first of these reports, "Our Changing Climate: Assessing Risks to California," and its supporting document, "Scenarios of Climate Change in California: An Overview," were published by the California Climate Change Center in 2006.

Senate Bill 1078, Senate Bill 107, and Executive Order S-14-08

SB 1078 initially set a target of 20 percent of energy to be sold from renewable sources by the year 2017. The schedule for implementation of the renewable portfolio standard (RPS) was accelerated in 2006 with the Governor's signing of SB 107, which accelerated the 20 percent RPS goal from 2017 to 2010. On November 17, 2008, the Governor signed Executive Order S-14-08, which establishes a goal of having all retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020. The Governor signed Executive Order S-21-09 on September 15, 2009, which directs the CARB to implement a regulation consistent with the 2020 33 percent renewable energy target by July 31, 2010.

Senate Bill 1368

SB 1368 was enacted in 2006, and required the CPUC to establish a CO_2 emissions standard for base load generation owned by or under long-term contract with publicly owned utilities. The CPUC established a GHG Emissions Performance Standard of 1,100 pounds of CO_2 per megawatt-hour (MWh). SB 1368 also requires the posting of notices of public deliberations by publicly owned companies on the CPUC website and establishes a process to determine compliance with the Emissions Performance Standard. The Project, as a renewable energy

generation facility, is determined by rule to comply with the GHG Emission Performance Standard requirements of SB 1368.

Assembly Bill 32

In September 2006, Governor Schwarzenegger signed Assembly Bill (AB) 32 into law. AB 32 required that, by January 1, 2008, the CARB determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. The CARB adopted its Scoping Plan, which provided estimates of the 1990 GHG emissions level and identified sectors for the reduction of GHG emissions, in December 2008. The CARB has estimated that the 1990 GHG emissions level was 427 MMT CO_2e (CARB 2009). The CARB estimates that a reduction of 173 MMT CO_2e emissions below business-as-usual would be required by 2020 to meet the 1990 levels (CARB 2009). This amounts to roughly a 30 percent reduction from projected business-as-usual levels in 2020 (CARB 2009). Under Executive Order B-30-15, the goals of AB 32 were extended to a 40 percent reduction from 2020 levels by 2030. In 2017, CARB issued their Climate Change Scoping Plan, which presented a strategy for achieving the 2030 target.

Senate Bill 97

Senate Bill (SB) 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. SB 97 directed the Governor's Office of Planning and Research to develop draft state CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009, and directed the California Natural Resources Agency to certify and adopt the state CEQA guidelines by January 1, 2010.

The Office of Planning and Research published a technical advisory on CEQA and climate change on June 19, 2008. The guidance did not include a suggested threshold, but stated that the Office of Planning and Research had asked the CARB to "recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of greenhouse gas emissions throughout the state." The Office of Planning and Research technical advisory does recommend that CEQA analyses include the following components:

- identification of greenhouse gas emissions;
- determination of significance; and
- mitigation of impacts, as needed and as feasible.

On December 31, 2009, the California Natural Resources Agency adopted the proposed amendments to the state CEQA Guidelines. These amendments became effective on March 18, 2010.

Executive Order S-21-09

Executive Order S-21-09 was enacted by the Governor on September 15, 2009. Executive Order S-21-09 requires that the CARB, under its AB 32 authority, adopt a regulation by July 31, 2010 that sets a 33 percent renewable energy target. Under Executive Order S-21-09, the CARB will work with the Public Utilities Commission and California Energy Commission to encourage the

creation and use of renewable energy sources, and will regulate all California utilities. The CARB will also consult with the Independent System Operator and other load balancing authorities on the impacts on reliability, renewable integration requirements, and interactions with wholesale power markets in carrying out the provisions of the Executive Order. The order requires the CARB to establish highest priority for those resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health.

17 CCR §95350 et seq.

The purpose of this regulation is to achieve GHG emission reductions by reducing SF_6 emissions from gas-insulated switchgear. Gas-insulated switchgear owners must not exceed maximum allowable annual emissions rates, which are reduced each year until 2020, after which annual emissions must not exceed 1.0 percent. Owners must regularly inventory gas-insulated switchgear equipment and measure quantities of SF_6 and maintain records of these for at least 3 years. Additionally, by June 1, 2012, and June 1 of each year thereafter, each gas-insulated switchgear owner must submit an annual report to the Executive Officer for emissions that occurred during the previous calendar year.

State Standards Addressing Vehicular Emissions

California Assembly Bill 1493 (Pavley), enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Regulations adopted by the CARB would apply to 2009 and later model year vehicles. The CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030 (AEP 2007). Overall within the state of California, implementation of the Pavley standards is anticipated to reduce GHG emissions by 17.23 percent (CARB 2013).

The CARB has adopted amendments to the Pavley regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments, approved by the CARB Board on September 24, 2009, are part of California's commitment toward a nationwide program to reduce new passenger vehicle GHGs from 2012 through 2016, and prepare California to harmonize its rules with the Federal rules for passenger vehicles.

Executive Order S-01-07

Executive Order S-01-07 was enacted by the Governor on January 18, 2007, and mandates that: 1) a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and 2) a Low Carbon Fuel Standard for transportation fuels be established for California. On April 23, 2009, the CARB adopted regulations to implement the Low Carbon Fuel Standard.

Senate Bill 375

SB 375 finds that GHG from autos and light trucks can be substantially reduced by new vehicle technology, but even so, "…it will be necessary to achieve significant additional greenhouse gas reductions from changed land use patterns and improved transportation. Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." Therefore, SB 375 requires that regions with metropolitan planning organizations adopt

sustainable community strategies, as part of their regional transportation plans, which are designed to achieve certain goals for the reduction of GHG emissions from mobile sources.

Senate Bill 350

Senate Bill 350 was signed into legislation in October 2015. SB 350 requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030.

D.8.3 Local

Riverside County Climate Action Plan

Riverside County adopted a Climate Action Plan in December, 2015 (Riverside County 2015). The plan included completion of a GHG emissions inventory, and established a goal to reduce emissions to 1990 levels by 2020, a reduction of 15 percent below the 2008 emissions. The plan summarized the General Plan policies that also affect GHG emissions, as well as measures from AB 32 and the County related to transportation, energy, and other sources. The energy-related measures include the state's Renewable Portfolio Standard related to renewable energy production, as well as a variety of measures to encourage energy efficiency and onsite generation of solar energy at residential and commercial buildings. The plan does not specifically address County policies related to approval of commercial-scale solar power plants.

D.9 HAZARDS AND HAZARDOUS MATERIALS

D.9.1 Federal

Comprehensive Environmental Response and Liability Act and Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) amended the Comprehensive Environmental Response and Liability Act (CERCLA) and governs hazardous substances. The applicable part of SARA is Title III, otherwise known as the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA). EPCRA establishes requirements for Federal, state, and local governments, as well as Indian Tribes and industry members regarding emergency planning and reporting on hazardous and toxic chemicals (USEPA, 2000). Key sections of the law include:

***§304*:** Requires immediate notification to the local emergency planning committee (LEPC) and the state emergency response commission (SERC) when a hazardous material is released in excess of its reportable quantity (RQ). If a CERCLA-listed hazardous substance RQ is released, notification must also be given to the National Response Center in Washington, D.C. (RQs are listed in 40 CFR Part 302, Table 302.4). These notifications are in addition to notifications given to the local emergency response team or fire personnel.

***§311*:** Requires that either material safety data sheets (MSDSs) for all hazardous materials or a list of all hazardous materials be submitted to the SERC, LEPC, and local fire department.

Clean Air Act

Regulations under the CAA are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store a Threshold Quantity (TQ) or greater of listed regulated substances to develop a Risk Management Plan (RMP), including hazard assessments and response programs to prevent accidental releases of listed chemicals. The list of regulated substances and their threshold quantities is found under Section 112(r) of the Clean Air Act.

Hazardous Materials Transport Act

The U.S. Department of Transportation (USDOT), in conjunction with the USEPA, is responsible for enforcement and implementation of Federal laws and regulations pertaining to transportation of hazardous materials. The Hazardous Materials Transportation Act of 1974 directs the USDOT to establish criteria and regulations regarding the safe storage and transportation of hazardous materials. 49 CFR Parts 171–180 regulate the transportation of hazardous materials, the types of material that are defined as hazardous, and the marking of vehicles transporting hazardous materials.

Federal Water Pollution Control Act (Clean Water Act)

The CWA is a comprehensive statute focused on restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Originally enacted in 1948, the CWA was amended numerous times until it was reorganized and expanded in 1972. It continues to be amended almost on an annual basis.

Primary authority for the implementation and enforcement of the CWA rests with the EPA. The CWA authorizes water quality programs, requires Federal effluent limitations and state water quality standards, requires permits for the discharge of pollutants into navigable waters, provides enforcement mechanisms, and authorizes funding for wastewater treatment works construction grants and state revolving loan programs, as well as funding to states and Tribes for their water quality programs. Provisions have also been added to address water quality problems in specific regions and specific waterways. The Project would be subject to a National Pollutant Discharge Elimination System (NPDES) Construction General Permit during construction and a General Industrial Permit during operations and maintenance to address water quality.

Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901 et seq.)

The RCRA grants authority to the EPA to control hazardous waste from start to finish. This covers the production, transportation, treatment, storage, and disposal of hazardous waste. The RCRA also sets forth a framework for the management of non-hazardous solid waste. The 1986 amendments to the RCRA enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Occupational Safety and Health Act

Congress passed the Occupational Safety and Health Act (OSHA) to ensure safe and healthful working conditions for working men and women. OSHA authorized enforcement of the standards developed under the Act and assisted states in their efforts to ensure safe and healthful working conditions. OSHA also provides for research, information, education, and training in the

field of occupational safety and health. The Project would be subject to OSHA requirements during construction, operations and maintenance, and decommissioning.

Federal Aviation Administration Regulations Part 77

Federal Aviation Administration (FAA) regulations, 14 CFR Part 77, establish standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for evaluating the effects of construction or alteration on operating procedures; determining the potential hazardous effect of the proposed construction on air navigation; identifying mitigation measures to enhance safe air navigation; and charting of new objects.

These regulations apply to the following:

- Any construction or alteration exceeding 200 feet above ground level;
- Any construction or alteration:
  - within 20,000 feet of a public use or military airport that exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 feet long
  - within 10,000 feet of a public use or military airport that exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 feet long
  - within 5,000 feet of a public use heliport that exceeds a 25:1 surface;
  - Any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above-noted standards:
  - when requested by the FAA; and
  - any construction or alteration located on a public use airport or heliport regardless of height or location.

Western Electricity Coordinating Council (WECC)

There are no health-based Federal regulations or industry codes specifying environmental limits on the strengths of fields from power lines. However, the Western Electricity Coordinating Council (WECC), a regional entity responsible for promoting and coordinating bulk electric system reliability in the western United States, has adopted a policy to separate parallel transmission lines within a common corridor by the greatest of 500 feet or the length of the longest span (distance between adjacent transmission structures).

D.9.2 State

Safe Drinking Water and Toxics Enforcement Act

The Safe Drinking Water and Toxics Enforcement Act (Health and Safety Code §25249.5 et seq.) identifies chemicals that cause cancer and reproductive toxicity, provides information for the public, and prevents discharge of the chemicals into sources of drinking water. Lists of the chemicals of concern are published and updated periodically. The Act is administered by California's Office of Environmental Health Hazard Assessment (OEHHA).

Aboveground Petroleum Storage Act

Assembly Bill 1130 (2007) updated the Aboveground Petroleum Storage Act of 1990 (Health and Safety Code §§25270 to 25270.13) and requires the owner or operator of a tank facility with an aggregate storage capacity greater than 1,320 gallons of petroleum to file an inventory statement with the local Certified Unified Program Agency (CUPA) and to prepare an SPCC plan. An SPCC plan must identify appropriate spill containment or equipment for diverting spills from sensitive areas, as well as discuss facility-specific requirements for the storage system, inspections, recordkeeping, security, and personnel training.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act (Health and Safety Code §25500 *et seq.*; 19 CCR §2620, *et seq.*), requires local governments to regulate local businesses using hazardous materials in excess of certain quantities to prepare a Hazardous Materials Business Plan (HMBP) that describes their facilities, inventories, emergency response plans, and training programs to their local CUPA and to report releases to their CUPA and the California Office of Emergency Services. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste. HMBPs shall include the following: (1) a hazardous material inventory in accordance with 19 CCR §§2729.2 to 2729.7; (2) emergency response plans and procedures in accordance with 19 CCR §2731; and (3) training program information in accordance with 19 CCR §2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state. Each business shall prepare a HMBP if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

1. 500 pounds of a solid substance,
2. 55 gallons of a liquid,
3. 200 cubic feet of compressed gas,
4. A hazardous compressed gas in any amount, and
5. Hazardous waste in any quantity.

Health and Safety Code §25531

This code section and the California Accidental Release Program (CalARP) regulate the registration and handling of regulated substances. Regulated substances are any chemicals designated as an extremely hazardous substance by the USEPA as part of its implementation of SARA Title III. Health and Safety Code §25531 overlaps or duplicates some of the requirements of SARA and the CAA. Facilities handling or storing regulated substances at or above Threshold Planning Quantities must register with their local CUPA and prepare an RMP.

8 CCR §5189

This regulation requires facility owners that store a TQ of hazardous materials to develop and implement effective safety management plans that ensure that hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process.

Health and Safety Code §41700

This code section states, "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

Hazardous Waste Control Law

The Hazardous Waste Control Law (HWCL) (Health and Safety Code §§25100-25249) created the state hazardous waste management program, which is similar to but more stringent than the Federal RCRA program. The act is implemented by regulations contained in 22 CCR §66250 et seq., which describes the following required aspects for the proper management of hazardous waste:

1. Identification and classification;
2. Generation and transportation;
3. Design and permitting of recycling, treatment, storage, and disposal facilities;
4. Treatment standards;
5. Operation of facilities and staff training; and
6. Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the HWCL and its implementing regulations, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program)

This program requires the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a CUPA. The Program Elements consolidated under the Unified Program are:

1. Hazardous Waste Generator and On-site Hazardous Waste Treatment Programs (a.k.a., Tiered Permitting),
2. Aboveground Petroleum Storage Tank SPCC,

3. Hazardous Materials Release Response Plans and Inventory Program (a.k.a. Hazardous Materials Disclosure or "Community-Right-To-Know"),
4. CalARP,
5. Underground Storage Tank (UST) Program, and
6. Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA. The Riverside County Department of Environmental Health is the CUPA in the Project area.

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) and the State Water Resources Control Board establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

Department of Toxic Substance Control

The Department of Toxic Substances Control (DTSC) has primary regulatory responsibility for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law. Enforcement is delegated to local jurisdictions that enter into agreements with the DTSC.

California's Secretary of Environmental Protection established a unified hazardous waste and hazardous materials management regulatory program as required by Health and Safety Code Chapter 6.11. The unified program consolidates, coordinates, and makes consistent portions of the following six existing programs:

- Hazardous Waste Generations and Hazardous Waste On-site Treatment
- Underground Storage Tanks
- Hazardous Material Release Response Plans and Inventories
- California Accidental Release Prevention Program
- Aboveground Storage Tanks (spill control and countermeasure plan only)

- Uniform Fire Code Hazardous Material Management Plans and Inventories

The statute requires all counties to apply to the CalEPA Secretary for the certification of a local unified program agency. Qualified cities are also permitted to apply for certification. The local Certified Unified Program Agency (CUPA) is required to consolidate, coordinate, and make consistent the administrative requirements, permits, fee structures, and inspection and enforcement activities for these six program elements within the county. Most CUPAs have been established as a function of a local environmental health or fire department.

The Office of the State Fire Marshal participates in all levels of the CUPA program including regulatory oversight, CUPA certifications, evaluations of the approved CUPAs, training, and education. The Riverside County Department of Environmental Health serves as the CUPA in Riverside County.

California Office of Emergency Services

In order to protect the public health and safety and the environment, the California Office of Emergency Services is responsible for establishing and managing statewide standards for business and area plans relating to the handling and release or threatened release of hazardous materials. Basic information on hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and the health risks) needs to be available to firefighters, public safety officers, and regulatory agencies. Such information needs to be included in business plans in order to prevent or mitigate the damage to the health and safety of persons and the environment from the release or threatened release of these materials into the workplace and environment.

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than Federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

California Highway Patrol

A valid Hazardous Materials Transportation License, issued by the California Highway Patrol, is required by the laws and regulations of Vehicle Code §3200.5 for transportation of either:

1. Hazardous materials shipments for which the display of placards is required by state regulations; or
2. Hazardous materials shipments of more than 500 pounds, which would require placards if shipping greater amounts in the same manner.

Additional requirements on the transportation of explosives, inhalation hazards, and radioactive materials are enforced by the California Highway Patrol under the authority of the Vehicle Code. Transportation of explosives generally requires consistency with additional rules and regulations

for routing, safe stopping distances, and inspection stops (14 CCR §§1150-1152.10). Inhalation hazards face similar, more restrictive rules and regulations (13 CCR §§1157-1157.8). Radioactive materials are restricted to specific safe routes for transportation of such materials.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to but more stringent than the Federal RCRA program. The act is implemented by regulations contained in Title 26 of the CCR, which describes the following required aspects for the proper management of hazardous waste:

- identification and classification;
- generation and transportation;
- design and permitting of recycling, treatment, storage, and disposal facilities;
- treatment standards;
- operation of facilities and staff training; and
- closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

CPUC Rules for Overhead Electric Line Construction, General Order No. 95 (GO-95)

CPUC General Order No. 95 specifies requirements for overhead line design, construction, and maintenance, the application of which is intended to ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general.

D.9.3 Local

Riverside County Airport Land Use Compatibility Plan

The Project would be located within the area covered by the RCALUCP, within Zones D and E of the AIA. The RCALUCP sets forth the criteria and policies that the Riverside County ALUC uses in assessing the compatibility between the principal airports in Riverside County and proposed land use development in the areas surrounding them. The RCALUCP primarily deals with review of local general plans, specific plans, zoning ordinances, and other land use documents covering broad geographic areas. Certain individual land use development proposals also may be reviewed by the ALUC as provided in the policies identified in the RCALUCP. The ALUC does not have authority over existing incompatible land uses or the operation of any airport.

The ALUC adopts Airport Land Use Compatibility Plans for the areas surrounding the airports within its jurisdiction. Local development approvals must be found consistent with the RCALUCP unless approved by a 4/5th supermajority vote. The RCALUCP identifies AIAs to

protect the public from the adverse effects of aircraft noise, ensure that facilities and people are not concentrated in areas susceptible to aircraft accidents, and ensure that no structures or activities adversely affect or encroach upon the use of navigable airspace (ALUC 2012). The Compatibility Plan for Blythe Airport is based upon the Airport Master Plan adopted by the Riverside County Board of Supervisors in 2001.

The following RCALUCP county-wide policies are applicable to the proposed Project:

Policy 1.5.3. Major Land Use Actions: The scope or character of certain major land use actions, as listed below, is such that their compatibility with airport activity is a potential concern. Even though these actions may be basically consistent with the local general plan or specific plan, sufficient detail may not be known to enable a full airport compatibility evaluation at the time that the general plan or specific plan is reviewed. To enable better assessment of compliance with the compatibility criteria set forth herein, ALUC review of these actions may be warranted. The circumstances under which ALUC review of these actions is to be conducted are indicated in Policy 1.5.2 above.

1. Actions affecting land uses within any compatibility zone.
    - Any proposed expansion of the sphere of influence of a city or special district.
    - Proposed pre-zoning associated with future annexation of land to a city.
    - Proposed development agreements or amendments to such agreements.
    - Proposed residential development, including land divisions, consisting of five or more dwelling units or lots.
    - Any discretionary development proposal for projects having a building floor area of 20,000 square feet or greater unless only ministerial approval (e.g., a building permit) is required.
    - Major capital improvements (e.g., water, sewer, or roads) which would promote urban uses in undeveloped or agricultural areas to the extent that such uses are not reflected in a previously reviewed general plan or specific plan.
    - Proposed land acquisition by a government entity for any facility accommodating a congregation of people (for example, a school or hospital).
    - Any off-airport, non-aviation use of land within Compatibility Zone A of any airport.
    - Proposals for new development (including buildings, antennas, and other structures) having a height of more than:
        - 35 feet within Compatibility Zone B1, B2, or a Height Review Overlay Zone;
        - 70 feet within Compatibility Zone C; or
        - 150 feet within Compatibility Zone D or E.
    - Any obstruction reviewed by the Federal Aviation Administration in accordance with Part 77 of the Federal Aviation Regulations that receives a finding of anything other than "not a hazard to air navigation."
    - Any project having the potential to create electrical or visual hazards to aircraft in flight, including:

- Electrical interference with radio communications or navigational signals;
- Lighting which could be mistaken for airport lighting;
- Glare in the eyes of pilots of aircraft using the airport; and
- Impaired visibility near the airport.

- Projects having the potential to cause attraction of birds or other wildlife that can be hazardous to aircraft operations to be increased within the vicinity of an airport.

2. Proposed non-aviation development of airport property if such development has not previously been included in an airport master plan or community general plan reviewed by the Commission. (See Policy 1.2.5 for definition of aviation-related use.)
3. Regardless of location within Riverside County, any proposal for construction or alteration of a structure (including antennas) taller than 200 feet above the ground level at the site. (Such structures also require notification to the Federal Aviation Administration in accordance with Federal Aviation Regulations, Part 77, Paragraph 77.13(a) (1).)
4. Any other proposed land use action, as determined by the local planning agency, involving a question of compatibility with airport activities.

Policy 3.1.4. Nonresidential Development: The compatibility of nonresidential development shall be assessed primarily with respect to its usage intensity (the number of people per acre) and the noise-sensitivity of the use. Additional criteria listed in Table 2A shall also apply.

a) The total number of people permitted on a project site at any time, except for rare special events, must not exceed the indicated usage intensity times the gross acreage of the site.

1) Usage intensity calculations shall include all people (e.g., employees, customers/ visitors, etc.) who may be on the property at any single point in time, whether indoors or outside.

2) Rare special events are ones (such as an air show at an airport) for which a facility is not designed and normally not used and for which extra safety precautions can be taken as appropriate.

b) No single acre of a project site shall exceed the number of people per acre indicated in Policy 4.2.5(b) and listed in Table 2A unless special risk reduction building design measures are taken as described in Policy 4.2.6.

c) The noise exposure limitations cited in Policy 4.1.4 and listed in Table 2B shall be the basis for assessing the acceptability of proposed nonresidential land uses relative to noise impacts. The ability of buildings to satisfy the interior noise level criteria noted in Policy 4.1.6 shall also be considered.

Policy 3.1.5. Prohibited Uses: Regardless of usage intensity, certain types of uses are deemed unacceptable within portions of an airport influence area. See Policy 4.2.3 and Table 2A. In addition to these explicitly prohibited uses, other uses will normally not be permitted in the respective compatibility zones because they do not meet the usage intensity criteria.

Policy 3.1.6. Other Development Conditions: All types of proposed development shall be required to meet the additional conditions listed in Table 2A [Table 3.3.8-1 above] for the

respective compatibility zone where the development is to be located. Among these conditions are the following:

a) Aviation Easement Dedication: See Policy 4.3.5.

b) Deed Notice: See Policy 4.4.3.

c) Real Estate Disclosure: See Policy 4.4.2.

d) Noise Level Reduction: See Policy 4.1.6.

e) Airspace Review: See Policy 4.3.3.

Policy 4.3.7. New land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area.

Riverside County General Plan

The Riverside County General Plan (Riverside County 2015a) Safety Element provides policies for development of the Project area within Riverside County. In compliance with state law, the primary objective of the Safety Element is to "reduce death, injuries, property damage, and economic and social impact from hazards." Countywide policies that address health and safety within the County boundaries are also located in the Land Use Element of the County General Plan.

Hazardous Waste and Materials – Hazardous Waste Management Plan

Policy S 7.3. Require commercial businesses, utilities, and industrial facilities that handle hazardous materials to:

- Install automatic fire and hazardous materials detection, reporting and shut -off devices; and
- Install an alternative communication system in the event power is out or telephone service is saturated following an earthquake.

Land Use Element (LU)

Policy LU 15.9. Ensure that no structures or activities encroach upon or adversely affect the use of navigable airspace.

Riverside County Hazardous Waste Management Plan

The Riverside County Hazardous Waste Management Plan (CHWMP) uses a framework of 24 existing and recommended programs. The CHWMP serves as the County's primary planning document for the management of hazardous substances. Although the title refers only to hazardous waste, the CHWMP is a comprehensive document containing all of the County programs for managing both hazardous materials and waste.

Southern California Hazardous Waste Management Authority

The SCHWMA was formed through a joint powers agreement between Santa Barbara, Ventura, San Bernardino, Orange, San Diego, Imperial, and Riverside Counties and the Cities of Los Angeles and San Diego. Each SCHWMA county has agreed to take responsibility for the treatment and disposal of hazardous waste in an amount that is at least equal to the amount generated within that county. This responsibility can be met by siting hazardous waste management facilities (transfer, treatment, and/or repository) capable of processing an amount of waste equal to or larger than the amount generated within the county, or by creating intergovernmental agreements between counties to provide compensation to a county for taking another county's waste, or through a combination of both facility siting and intergovernmental agreements. When and where a facility is to be sited is primarily a function of the private market. However, once an application to site a facility has been received, the county will review the requested facility and its location against a set of established siting criteria to ensure that the location is appropriate, and may deny the application based on the findings of this review. The County of Riverside does not presently have any of these facilities within its jurisdiction and therefore must rely on intergovernmental agreements to fulfill its fair share responsibility to SCHWMA.

Riverside County Department of Environmental Health

The Riverside County Department of Environmental Health, under the Health and Safety Code, is responsible for oversight of activities pertaining to the generation, storage, handling, disposal, treatment, and recycling of hazardous waste. Ordinance No. 615.3 has been implemented for the purpose of monitoring establishments where hazardous waste is generated, stored, handled, disposed, treated, or recycled and to regulate the issuance of permits and the activities of establishments where hazardous waste is generated. The Department of Environmental Health also contains a Hazardous Materials Management Branch, which is the CUPA for the entire County, and oversees all hazardous materials and hazardous waste-related activities.

D.10 LANDS, REALTY, AND AGRICULTURAL AND FORESTRY RESOURCES

D.10.1 Federal

Federal Land Policy and Management Act, 1976 as Amended

The United States Congress passed the FLPMA in 1976. Title V, "Rights-of-Way," of the FLPMA establishes public land policy and guidelines for administration, provides for management, protection, development, and enhancement of public lands, and provides the BLM authorization to grant ROW. Authorization of systems for generation, transmission, and distribution of electric energy is addressed in Section 501(4) of Title V. In addition, Section 503 specifically addresses "Right of Way Corridors" and requires common ROWs "to the extent practical." FLPMA, Title V, Section 501(a)(6) states, "[t]he Secretary, with respect to the public lands (including public lands, as defined in section 103(e) of this Act, which are reserved from entry pursuant to section 24 of the Federal Power Act (16 U.S.C. § 818)) [P.L. 102-486, 1992] and, the Secretary of Agriculture, with respect to lands within the National Forest System (except in each case land designated as wilderness), are authorized to grant, issue, or renew rights-of-way over, upon, under, or through such lands for roads, trails, highways, railroads, canals,

tunnels, tramways, airways, livestock driveways, or other means of transportation except where such facilities are constructed and maintained in connection with commercial recreation facilities on lands in the National Forest System."

The Applicant is seeking a ROW grant from the BLM Palm Springs-South Coast Field Office Authorized Officer to authorize the construction, operation, maintenance and decommissioning of a proposed solar facility and gen-tie line on land under the jurisdiction of the BLM.

California Desert Conservation Area Plan, 1980 as Amended

Section 601 of the FLPMA required preparation of a long range plan for the CDCA. The CDCA Plan was adopted in 1980 to provide for the use of public lands and resources of the CDCA in a manner that enhances, wherever possible, and does not diminish, on balance, the environmental, cultural, and aesthetic values of the Desert and its productivity. The CDCA Plan is a comprehensive, long range plan covering 25 million acres. Approximately 10 million acres (about half) of this total are public lands administered by the BLM. These public lands are dispersed throughout the California Desert, which includes the Mojave Desert, the Sonoran Desert, and a small portion of the Great Basin Desert.

The CDCA Plan includes 12 elements: Cultural Resources; Native American; Wildlife; Vegetation; Wilderness; Wild Horse and Burro; Livestock Grazing; Recreation; Motorized Vehicle Access; Geology, Energy and Mineral Resources; Energy Production and Utility Corridors; and Land Tenure Adjustment. Each of the elements contains goals and specific actions for the management, use, development, and protection of the resources and public lands within the CDCA, and is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. In addition, each element provides both a desert wide perspective of the planning decisions for one major resource or issue of public concern as well as more specific interpretation of multiple-use class guidelines for a given resource and its associated activities.

Programmatic Environmental Impact Statement to Develop and Implement Agency-Specific Programs for Solar Energy Development

In response to direction from Congress under Title II, Section 211 of the Energy Policy Act of 2005, as well as Executive Order 13212, Actions to Expedite Energy-Related Projects, the BLM and the U.S. Department of Energy have prepared a Solar Programmatic EIS (PEIS) pursuant to NEPA and CEQ regulations. The Solar PEIS evaluates utility-scale solar energy development in a six-state area, including that portion of the CDCA that is open to solar energy development in accordance with the provisions of the CDCA Plan. The Solar PEIS planning effort has focused on identifying locations on BLM lands that are most suitable for solar energy development. The entire Project would be located within BLM-managed lands and within the Riverside East SEZ. The Final Solar PEIS was released on July 24, 2012. The BLM issued a Record of Decision on October 12, 2012, that amended the CDCA Plan to identify all SEZ lands within the CDCA as sites associated with power generation or transmission (BLM 2012c).

Resource Management Plan/Record of Decision for Designation of Energy Corridors on Bureau of Land Management Administered Lands in the 11 Western States

Section 368 of the EPAct (Public Law 109-58) requires the DOI to examine and designate energy transportation corridors in the West. In response, the BLM issued the "Approved

Resource Management Plan Amendments/Record of Decision (ROD) for Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States" (BLM 2009) which designated §368 Corridors in the western United States. Section 368 corridors are identified with a numeric designation and are often overlain on locally designated corridors, as is the case with the east-west §368 2-mile wide Corridor 30-52 overlying Corridor K.

Appendix B to the ROD specifies Interagency Operating Procedures (IOPs) to meet the Section 368 requirement to improve the ROW application process and to meet NEPA requirements to provide practicable means to avoid or minimize environmental harm which may result from future ROW grants within the designated corridors. The IOPs specify regulatory compliance, agency coordination, government-to-government consultation, project design, and resource-specific considerations that must be addressed through NEPA analysis of the proposed use of the corridor.

D.10.2 Local

Land use and planning decisions for the 160-acre private inholding, and for non-BLM lands adjacent to the Project area, are guided and regulated by the Riverside County General Plan, PVVAP, and Riverside County Zoning Ordinance. The relevant plans contain goals, policies, and implementation measures that provide an overall foundation for establishing land use patterns. This section lists relevant goals, objectives, policies, and implementation measures related to the proposed land use. The Riverside County Zoning Ordinance contains regulations through which the applicable General Plan's provisions are implemented. The ALUCP establishes procedures and criteria by which the County can address compatibility issues when making planning decisions concerning airports. The most relevant regulations pertaining to solar energy development are presented below.

Riverside County General Plan

Adoption of the 2003 Riverside County General Plan (RCGP) occurred on October 7, 2003, with revisions in 2008 and 2015 (Riverside County 2015a). The RCGP consists of a vision statement and the following elements: Land Use, Circulation, Multi-purpose Open Space, Safety, Noise, Housing, Air Quality, and Administration. The RCGP sets forth County land use policies and guidance for implementation. The RCGP is augmented by more detailed Area Plans covering the County's territory. Area Plans provide a clear and more focused opportunity to enhance community identity within the County and stimulate quality of life at the community level.

RCGP land use designations adjacent to the Project area include Agriculture (AG) and Open Space Rural (OS-RUR). The Agriculture land use designation is established to help conserve productive agricultural lands within the County. These include row crops, nurseries, citrus groves and vineyards, dairies, ranches, poultry and hog farms, and other agriculture-related uses. Areas designated AG generally lack an infrastructure that is supportive of urban development. This land use designation allows one single-family residence per 10 acres except as otherwise specified by a policy or an overlay. The OS-RUR designation is applied to remote, privately owned open space areas with limited access and a lack of public services. This land use designation allows one single family residence per 20 acres. Mineral extraction is also allowed subject to an approved surface mining permit and provided that the proposed project is consistent with the maintenance of scenic resources and views from residential neighborhoods and major

roadways and the project does not detract from efforts to protect endangered species (Riverside County 2015a).

Policies at the General Plan and Area Plan levels implement the vision and goals of Riverside County. The County of Riverside Vision details the physical, environmental, and economic qualities that the County aspires to achieve by the year 2020. Using that Vision as the primary foundation, the RCGP establishes policies for development and conservation within the entire unincorporated County territory (Riverside County 2015a). The General Plan's policy goals that are potentially relevant to land use for the Project are provided below. Additional County of Riverside General Plan policy goals are detailed in other sections of this chapter, as applicable to the environmental resource topic analyzed.

Land Use Element (LU)

Policy LU 1.8. As required by the Airport Land Use Law, submit certain proposed actions to the Riverside County Airport Land Use Commission for review. Such actions include proposed amendments to the general plan, area plans, or specific plans, as well as proposed revisions to the zoning ordinance and building codes.

Policy LU 5.1. Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and child day care centers (i.e. infant, toddlers, preschool and school age children), transportation systems, and fire/police/medical services.

Policy LU 9.2. Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and Federal and state regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act.

Policy LU 17.2. Permit and encourage, in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including but not limited to, the development of solar power plants in the County of Riverside.

Multi-Purpose Open Space Element (OS)

Policy OS 15.2. Development of renewable resources should be encouraged.

Palo Verde Valley Area Plan

The Project is located on the Palo Verde Mesa in the Palo Verde Valley area within unincorporated Riverside County. The Project is within the planning area for the PVVAP. The PVVAP provides customized direction specifically for this easternmost reach of the County. The PVVAP guides the evolving character of the agricultural and desert area. The PVVAP focus is on the Colorado River and is anchored in the City of Blythe. The PVVAP planning area is bordered by Imperial County on the south, desert lands on the north and west, and the Colorado River on the east. The PVVAP is an extension of the RCGP and vision. The PVVAP's policy goals most relevant to the Project are provided in Sections 3.19 *Visual Resources*, 3.7 *Geology and Soil Resources*, and 3.14 *Recreation and Public Access*.

Riverside County Land Use Ordinance

Ordinance No. 348.4596 amends Ordinance No. 348 to authorize solar power plants on lots ten acres or larger, subject to a conditional use permit in the following zone classifications: General Commercial (C-1/C-P), Commercial Tourist (C-T), Scenic Highway Commercial (C-P-S), Rural Commercial (C-R), Industrial Park (I-P), Manufacturing Servicing Commercial (M-SC), Medium Manufacturing (M-M), Heavy Manufacturing (M-H), Mineral Resources (M-R), Mineral Resource and Related Manufacturing (M-R-A), Light Agriculture (A-1), Light Agriculture with Poultry (A-P), Heavy Agriculture (A-2), Agriculture-Dairy (AD), Controlled Development (W-2), Regulated Development Areas (R-D), Natural Assets (N-A), Waterways and Watercourses (W-1), and Wind Energy Resource Zone (W-E). Ordinance No. 348.4596 was last updated in 2010.

The proposed solar facility site would be located on BLM-managed lands in unincorporated Riverside County. Lands adjacent to the Project are currently zoned as Controlled Development Areas (W-2-10), including the privately-owned inholding within the Project area (Riverside County 2015b).

D.11 MINERAL RESOURCES

D.11.1 Federal

General Mining Act of 1872 as amended

This act (30 U.S.C. 22-42) Codified the system of acquiring and protecting mining claims on public land open to mineral entry and obtaining patent (fee simple title) to valid mining claims.

Mineral Leasing Act of 1920 as amended

Authorizes and governs leasing of public lands for developing deposits of coal, petroleum, natural gas and certain solid minerals (phosphates, sodium, sulfur, and potassium) (30 U.S.C. § 181 et seq.).

Surface Resources Act of 1955

This act (30 U.S.C. 612) exempts common-variety minerals such as gravel, sand, building stone, volcanic cinder, petrified wood etc. from location under the General Mining Act of 1872.

Geothermal Steam Act of 1970

Allows leasing of public lands for the development of Geothermal Resources (30 U.S.C. 1001–1028)

Mining and Mineral Policy Act of 1970

This act (30 USC §21 et seq.) declared that the policy of the Federal government is to encourage private enterprise in the development of a sound and stable domestic mineral industry and in orderly and economic development of mineral resources, research, and reclamation methods.

California Desert Conservation Area Plan, 1980 as Amended

The CDCA Plan defines multiple-use classes for BLM-managed lands within the CDCA, which includes land area encompassing the Project site. With respect to mineral resources, the CDCA Plan aims to maintain the availability of mineral resources on public lands for exploration and

development. The Project site is located within lands designated "Class M," or moderate use. Mineral exploration and development is allowed on Class M lands provided that NEPA requirements are met.

Public Land Order No. 7818

Under Public Land Order No. 7818, the Riverside East SEZ was withdrawn from location and entry under the United States mining laws, subject to valid existing rights, for a period of 20 years (Federal Register Vol. 78, No. 129, Pg. 40499, July 5, 2013). The lands remain open to mineral and geothermal leasing, and mineral material sales.

43 CFR § 3100 – 3120 (Competitive and non-Competitive Oil and Gas Leasing)

43 CFR § 3200 (Geothermal Resource Leasing)

43 CFR § 3600 (Mineral Materials Disposal)

43 CFR § 3715 (Use and Occupancy of Mining Claims)

43 CFR § 3809 (Surface Management)

D.11.2 State

State Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (PRC §2710 et seq.) mandated the initiation by the State Geologist of mineral land classification in order to help identify and protect mineral resources in areas within the state subject to urban expansion or other irreversible land uses that would preclude mineral extraction. The Surface Mining and Reclamation Act also allowed the State Mining and Geology Board, after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance. Mineral lands are mapped according to jurisdictional boundaries (i.e., counties), mapping all mineral commodities at one time in the area, using the California Mineral Land Classification System.

The objective of classification and designation processes is to ensure, through appropriate lead agency policies and procedures, that mineral deposits of statewide or of regional significance are available when needed. The State Mining and Geology Board, based on recommendations from the State Geologist and public input, prioritizes areas to be classified and/or designated. Areas that are generally given highest priority are those areas within the state that are subject to urban expansion or other irreversible land uses that would preclude mineral extraction.

Classification is completed by the State Geologist in accordance with the State Mining and Geology Board's priority list, into MRZs, as defined below. Classification of these areas is based on geologic and economic factors without regard to existing land use and land ownership. As stated above, the Project area and vicinity have been classified as MRZ-4 for mineral resources and are not designated as being of regional or state-wide importance. MRZ-4 is defined as areas where geologic information does not rule out either the presence or absence of mineral resources. It must be emphasized that MRZ-4 classification does not imply that there is little likelihood for

the presence of mineral resources, but rather there is a lack of knowledge regarding mineral occurrence.

D.11.3 Local

Riverside County uses the SMGB Mineral Resource Zone classifications, the designation of Aggregate Mineral Resource areas, and a County designation for Open Space – Mineral Resources in its General Plan. The Plan does not designate any areas within the Palo Verde Valley area for Open Space – Mineral Resources (Riverside County 2015b).

D.12 NOISE

Regulating environmental noise is generally the responsibility of local governments. The USEPA, however, has published guidelines on recommended maximum noise levels to protect public health and welfare.

D.12.1 Federal

Occupational Safety and Health Act

The Occupational Safety and Health Act of 1970 (OSHA) set on-site occupational noise exposure levels, which are regulated in California via the Cal/OSHA. The maximum time-weighted average noise exposure level of workers is 90 dBA over an eight-hour work shift (29 CFR Part 1910.95).

California Desert Conservation Area Plan, 1980 as Amended

The CDCA Plan (BLM 1980) contains provisions for public land-use management in the California Desert District under the BLM's jurisdiction. Since its first date of publication in 1980, the CDCA Plan has been amended in order to incorporate public concerns and congressional mandates in regard to the use of desert resources, such as the provisions of the 1994 California Desert Protection Act.

In particular, noise-related guidelines established in the CDCA Plan include long-term monitoring of effects of vehicle noise on wildlife (Chapter 3, Wildlife Element) and implementation of land use compatibility standards with limited (vehicle use) areas in order to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands (Chapter 3, Motorized-Vehicle Access Element). The CDCA Plan also identifies energy and utility corridors and power plant sites within the California Desert District (Chapter 3, Energy Production and Utility Corridors Element).

D.12.2 State

California Occupational Safety and Health Administration

The California Department of Industrial Relations, Division of Occupational Safety and Health, enforces Cal/OSHA regulations, which are the same as the Federal OSHA regulations described above. The regulations are contained in Title 8 of the CCR, General Industrial Safety Orders, Article 105, Control of Noise Exposure, Section 5095.

California Vehicle Code

The California Vehicle Code, Sections 23130 and 23130.5, limits highway vehicle noise and is enforced by the California Highway Patrol and the County Sheriff's Office.

California State Planning Law

The State of California requires local jurisdictions (via California Government Code Section 65302(f)) to develop general plans that include "Noise Elements." A key component of determining land use compatibility is defining appropriate noise thresholds and where such standards apply. "Noise-sensitive" land use classifications in the state of California include residential areas, schools, convalescent and acute care hospitals, parks and recreational areas, and churches. For exterior living areas, such as yards and patios, the noise threshold guideline for new residential land uses is 55 dBA CNEL and must not exceed 65 dBA CNEL.

D.12.3 Local

Riverside County General Plan

The Riverside County General Plan's (Riverside County 2015a) Noise Element includes noise compatibility guidance. The Land Use Compatibility for Community Noise Exposure, included in the noise element, indicates that residential low density, single family, duplex, and mobile homes are normally acceptable up to 60 dBA day-night average sound level (Ldn) or CNEL.

Riverside County's Ordinance No. 847 addresses noise. Ordinance No. 847 states: "This ordinance is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are hereby established." Accordingly, noise in excess of the standards set in Ordinance 847 does not necessarily create a significant impact. Section 4 of Ordinance 847, lists maximum nighttime and daytime sound levels for occupied property by General Plan land use designation. The most restrictive limit would apply to the nearest occupied receptors, which are classified as Rural Residential. The ordinance indicates the maximum decibel level allowed in Rural Residential is a daytime and nighttime limit of 45 dBA Lmax (maximum sound level) when measured at the exterior of an occupied property, except:

- Private construction projects located one-quarter of a mile or more from an inhabited dwelling; or
- private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that: 1) Construction does not occur between the hours of 6 p.m. and 6 a.m. during the months of June through September; and 2) Construction does not occur between the hours of 6 p.m. and 7 a.m. during the months of October through May (Riverside County 2007).

The Riverside County General Plan (Riverside County 2015a) includes policies that address noise within the County boundaries. The policies that would be applicable to the proposed Project are included below.

Noise Element (N)

Policy N 1.4. Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys.

Policy N 1.5. Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.

Policy N 3.3. Ensure compatibility between industrial development and adjacent land uses. To achieve compatibility, industrial development projects may be required to include noise mitigation measures to avoid or minimize project impacts on adjacent uses.

Policy N 7.4. Check each development proposal to determine if it is located within an airport noise impact area as depicted in the applicable Area Plan's Policy Area section regarding Airport Influence Areas. Development proposals within a noise impact area shall comply with applicable airport land use noise compatibility criteria.

Policy N 12.1. Minimize the impacts of construction noise on adjacent uses within acceptable practices.

Policy N 12.2. Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.

Land Use Element (LU)

Policy LU 29.6. Require that commercial projects abutting residential properties protect the residential use from the impacts of noise, light, fumes, odors, vehicular traffic, parking, and operational hazards.

Riverside County Airport Land Use Compatibility Plan

Noise policies related to the Riverside County ALUC's New Compatibility Plan (RCALUCP 2004) are provided below.

Policy 3.1.4. *Nonresidential Development:* The compatibility of nonresidential development shall be assessed primarily with respect to its usage intensity (the number of people per acre) and the noise-sensitivity of the use. Additional criteria listed in Table 2A shall also apply.

a) The total number of people permitted on a project site at any time, except for rare special events, must not exceed the indicated usage intensity times the gross acreage of the site.

    1) Usage intensity calculations shall include all people (e.g., employees, customers/ visitors, etc.) who may be on the property at any single point in time, whether indoors or outside.

    2) Rare special events are ones (such as an air show at an airport) for which a facility is not designed and normally not used and for which extra safety precautions can be taken as appropriate.

b) No single acre of a project site shall exceed the number of people per acre indicated in Policy 4.2.5(b) and listed in Table 2A unless special risk reduction building design measures are taken as described in Policy 4.2.6.

c) The noise exposure limitations cited in Policy 4.1.4 and listed in Table 2B shall be the basis for assessing the acceptability of proposed nonresidential land uses relative to noise impacts. The ability of buildings to satisfy the interior noise level criteria noted in Policy 4.1.6 shall also be considered.

Policy 3.1.6. *Other Development Conditions:* All types of proposed development shall be required to meet the additional conditions listed in Table 2A for the respective compatibility zone where the development is to be located. Among these conditions are the following:

a) Avigation Easement Dedication: See Policy 4.3.5.

b) Deed Notice: See Policy 4.4.3.

c) Real Estate Disclosure: See Policy 4.4.2.

d) Noise Level Reduction: See Policy 4.1.6.

e) Airspace Review: See Policy 4.3.3.

Policy 4.1.1. *Policy Objective:* The purpose of noise compatibility policies is to avoid establishment of noise-sensitive land uses in the portions of airport environs that are exposed to significant levels of aircraft noise.

Policy 4.1.5. *Noise Exposure for Other Land Uses:* Noise level compatibility standards for other types of land uses shall be applied in the same manner as the above residential noise level criteria. The extent of outdoor activity associated with a particular land use is an important factor to be considered in evaluating its compatibility with airport noise. Examples of acceptable noise levels for other land uses in an airport's vicinity are presented in Table 2B.

Policy 4.1.6. *Interior Noise Levels:* Land uses for which interior activities may be easily disrupted by noise shall be required to comply with the following interior noise level criteria.

a) The maximum, aircraft-related, interior noise level that shall be considered acceptable for land uses near airports is 45 dB CNEL in:

- Any habitable room of single- or multi-family residences;
- Hotels and motels;
- Hospitals and nursing homes;
- Churches, meeting halls, theaters, and mortuaries;
- Office buildings; and
- Schools, libraries, and museums.

b) The noise contours depicted in Chapter 3 of this Plan shall be used in calculating compliance with these criteria. The calculations should assume that windows are closed.

c) When reviewed as part of a general plan or zoning ordinance amendment or as a major land use action, evidence that proposed structures will be designed to comply with the above criteria shall be submitted to the ALUC under the following circumstances:

Any mobile home situated within an airport's 55-dB CNEL contour. [A typical mobile home has an average exterior-to-interior noise level reduction (NLR) of approximately 15 dB with windows closed.]

D.13 PALEONTOLOGICAL RESOURCES

D.13.1 Federal

The management and preservation of paleontological resources on public lands are governed under various laws, regulations, and standards. For the past several decades, the BLM has used the FLMPA as the legislative foundation for its paleontological resource management policies. The BLM has also developed general procedural guidelines (Manual H-8720-1; Instructional Memorandum [IM] 2008-009; IM 2009-011) for the management of paleontological resources (BLM 2007). Paleontological resource management objectives include the evaluation, management, protection, and location of fossils on BLM-managed lands. Management policy also includes measures to ensure that proposed land use projects do not inadvertently damage or destroy scientifically significant paleontological resources.

Federal Land Management and Policy Act

FLMPA defines significant fossils as: unique, rare or particularly well-preserved; an unusual assemblage of common fossils; being of high scientific interest; or providing important new data concerning [1] evolutionary trends, [2] development of biological communities, [3] interaction between or among organisms, [4] unusual or spectacular circumstances in the history of life, [5] or anatomical structure.

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act (PRPA), Title VI, Subtitle D of the Omnibus Public Lands Act directs the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on Federal land using "scientific principles and expertise." The PRPA incorporates most of the recommendations of the report of the Secretary of the Interior entitled "Assessment of Fossil Management on Federal and Indian Lands" (USDI 2000) in order to formulate a consistent paleontological resources management framework. In passing the PRPA, Congress officially recognized the scientific importance of paleontological resources on some Federal lands by declaring that fossils from these lands are Federal property that must be preserved and protected.

The PRPA codifies existing policies of the BLM, NPS, USFS, Bureau of Reclamation, and USFWS, and provides the following:

1. criminal and civil penalties for illegal sale and transport, and theft and vandalism of fossils from Federal lands;
2. minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants);
3. definitions for "paleontological resources" and "casual collecting"; and
4. requirements for curation of Federal fossils in approved repositories.

Federal legislative protections for scientifically significant fossils apply to projects that take place on Federal lands (with certain exceptions such as DOD), involve Federal funding, require a Federal permit, or involve crossing state lines. Because most of the Project site is located on

BLM-managed lands, Federal protections for paleontological resources apply under NEPA and FLPMA.

Potential Fossil Yield Classification System

Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of paleontological resources.

The BLM uses the PFYC system, which classifies geologic units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification is applied to the geologic formation, member, or other distinguishable unit, preferably at the most detailed mappable level. It is not intended to be applied to specific paleontological localities or small areas within units. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class; instead, the relative abundance of significant localities is intended to be the major determinant for the class assignment.

D.13.2 State

Public Resources Code §5097.5

PRC §5097.5 includes additional state-level requirements for the assessment and management of paleontological resources, including the reasonable mitigation of adverse impacts to paleontological resources resulting from development on public lands (lands under state, county, city, or public district or agency ownership or jurisdiction). This regulation defines the removal of paleontological "sites" or "features" from public lands as a misdemeanor, and prohibits the removal of any paleontological "site" or "feature" from public land without permission of the applicable jurisdictional agency. These protections apply only to non-Federal public lands within California, and thus apply only to private land portion of the DQSP.

Public Resources Code §30244

If paleontological resources would be adversely impacted as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

D.13.3 Local

Riverside County General Plan

The Multipurpose Open Space Element of the Riverside County General Plan (Riverside County 2015a) identifies policies intended to minimize impacts to paleontological resources. It also includes a Paleontological Sensitivity Resources map indicating lands with low, undetermined, or high potential for finding paleontological resources. The following policies apply to the portions of the Project site within County- and privately-owned lands (Riverside County 2015a):

OS 19.6. Whenever existing information indicated that a site proposed for development has high paleontological sensitivity as shown on Figure OS-7, a paleontological resource impact

mitigation program (PRIMP) shall be filed with the County Geologist. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.

OS 19.7. Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown in Figure OS-7, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.

OS 19.8. Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-7, a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources.

D.14 RECREATION AND PUBLIC ACCESS

D.14.1 Federal

The Project would be located primarily on BLM-administered lands. The following is a discussion of the Federal plans and policies that would be applicable to the BLM-administered lands on the Project site.

Federal Land Policy and Management Act, 1976 as Amended

FLPMA establishes public land policy; guidelines for administration; and provides for the management, protection, development, and enhancement of public lands. In particular, the FLPMA's relevance to the Project is that Title V, §501, establishes BLM's authority to grant ROWs for generation, transmission, and distribution of electrical energy. Under FLPMA, the BLM is responsible for the development of energy resources on BLM-administered lands in a manner that balances diverse resource uses and that takes into account the long-term needs of future generations for renewable and non-renewable resources. Among those uses, FLPMA recognizes that the public lands should be managed in a manner that will provide for outdoor recreation.

California Desert Conservation Area Plan, 1980 as Amended

The CDCA Plan (BLM 1980) includes a Recreation Element to address use of, and access to, recreational destinations within the California Desert. The management goals of the CDCA Plan Recreation Element are as follows:

1) Provide for a wide range of quality recreation opportunities and experiences emphasizing dispersed undeveloped use.
2) Provide a minimum of recreation facilities. Those facilities should emphasize resource protection and visitor safety.
3) Manage recreation use to minimize user conflicts, provide a safe recreation environment, and protect desert resources.

4) Emphasize the use of public information and educational techniques to increase public awareness, enjoyment, and sensitivity to desert resources.
5) Adjust management approach to accommodate changing visitor use patterns and preferences.
6) Encourage the use and enjoyment of desert recreation opportunities by special populations, and provide facilities to meet the needs of those groups.

In order to accommodate the goals, access to the desert must be provided while protecting sensitive resources. The Recreation Element states the following with regard to access:

"To engage in most desert recreational activities outside of open areas, visitors must use motorized vehicles and usually travel on some previously used or marked motorized-vehicle route. Understandably, vehicle access is among the most important recreation issues in the Desert. A primary consideration of the recreation program, therefore, is to ensure that access routes necessary for recreation enjoyment are provided" (BLM 1980, p. 84).

Northern and Eastern Colorado Desert Coordinated Management Plan

The NECO Plan (BLM 2002), as amended to the CDCA Plan, provides for management of recreation within the California Desert area of El Centro, Blythe, Needles, and cities in the Coachella Valley, including the Project study area. The NECO Plan Amendment to the CDCA Plan specifies the type of recreational activities allowed in Multiple-Use Classes on BLM-administered land. Under this plan, new routes may be allowed if approved by the authorized officer through the appropriate public process.

D.14.2 State

There are no state regulations that are applicable to recreational resources within the vicinity of the Project site.

D.14.3 Local

Riverside County General Plan

Private lands around the Project area, including the inholding within the Project area, are designated as Agriculture (AG) and Open Space Rural (OS-RUR) according to the Riverside County General Plan Land Use Map (Riverside County 2015a). Both designations allow for residential development at low density. Agricultural areas may be used for recreational activities, such as hunting or walking. No specific policies relating to recreation apply to the proposed Project.

D.15 SOCIAL AND ECONOMIC SETTING

D.15.1 Federal

National Environmental Policy Act

Under NEPA (42 USC §4321 et seq.), an EIS must include an analysis of the proposed action's economic, social, and demographic effects related to effects on the natural or physical

environment in the affected area, but does not allow for economic, social, and demographic effects to be analyzed in isolation from the physical environment.

The President's CEQ developed guidelines and procedures to assist Federal agencies with NEPA procedures so that environmental justice concerns are effectively identified and addressed. This includes guidelines for public participation, alternatives, and mitigation.

D.15.2 State

Title 14 California Code of Regulations § 15131

The regulations implementing CEQA state that economic or social factors of a project may be included in a CEQA document but shall not be treated as significant effects on the environment. However, economic or social effects of a project may be used to determine the significance of physical changes caused by the Project. Additionally, economic, social, and housing factors should be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment.

D.15.3 Local

There are no applicable local social or economic statutes, regulations, plans, or standards that apply to the Proposed Action.

D.16 SPECIAL DESIGNATIONS AND LANDS WITH WILDERNESS CHARACTERISTICS

D.16.1 Federal

The following summarizes the Federal statutes, regulations, plans and standards that would be applicable to the special designations on BLM-administered lands on and in the vicinity of the Project.

Federal Land Policy and Management Act, 1976 as Amended

FLPMA (Public Law 94-579, October 21, 1976), is called the BLM Organic Act because it consolidates and articulates BLM's management responsibilities. Many land and resource management authorities were established, amended, or repealed by FLPMA, and it proclaimed multiple use, sustained yield, and environmental protection as the guiding principles for public land management (BLM 2015).

Several sections of FLPMA provide guidance regarding the establishment, management, and inventory of resource values that are considered for special designations.

Lands in the vicinity of the Project were recently reviewed for wilderness characteristics based on FLPMA §201(a) requiring the BLM to:

> *prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be*

> *kept current so as to reflect changes in conditions and to identify new and emerging resource and other values. The preparation and maintenance of such inventory or the identification of such areas shall not, of itself, change or prevent change of the management or use of public lands.*

Section 202(c)(3) requires the BLM, through the land use planning system, to "give priority to the designation and protection of areas of critical environmental concern." In §103(a), an ACEC is defined as the following:

> *An area within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.*

Section 603(a) of FLPMA required BLM to conduct the original inventory of wilderness characteristics, which was completed in 1979, while §603(c) stated that "once an area has been designated for preservation as wilderness, the provisions of the Wilderness Act (16 USC 1131 et seq.) which apply to national forest wilderness areas shall apply with respect to the administration and use of such designated area".

Wilderness Act of 1964

The "Wilderness Act" (Public Law 88-577; September 3, 1964) is the legislation authorizing the establishment and management of the seven wilderness areas in the vicinity of Project Area. Section 4(a) states:

> *.....each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.*

California Desert Protection Act of 1994

The CDPA (Public Law 103-433, October 31, 1994) designated 69 areas as components of the National Wilderness Preservation System on BLM-managed public lands in the California Desert. Section 103(d) states that "wilderness is a distinguishing characteristic of the public lands in the California desert" and "the wilderness values of desert lands are increasing threatened by ...development." The CDPA further states that there are no buffer zones designated along with the wilderness areas: "The fact that non-wilderness activities or uses can be seen or heard from areas within a wilderness area shall not, in itself, preclude such activities or uses up to the boundary of a wilderness area."

Omnibus Public Lands Management Act of 2009

The Bureau of Land Management's National Landscape Conservation System (NLCS) was created in June 2000 to conserve, protect, and restore special areas and unique resources. The lands are prized for their cultural, ecological, scientific, educational, wildlife, and aesthetic

values for the benefit of current and future generations. The NLCS system gained legal permanence in 2009 with the passage of the Omnibus Public Land Management Act (Public Law 111-11, March 30, 2009) §2002(a). Section 2002(c) directed the BLM "to manage the system in accordance with any applicable law (including regulations) relating to any of component of the system in a manner that protects the values for which the components of the system were designated." The Public Lands within the CDCA and components of the National Wilderness Preservation System are areas included under this authorization.

California Desert Conservation Area Plan, 1980 as Amended

The CDCA is a 25-million acre expanse of land designated by Congress in 1976 through §601 of FLPMA. The BLM administers about 10 million of those acres. When Congress created the CDCA, it recognized its special values, and the need for a comprehensive plan for managing the area.

The CDCA Plan recognized the need to maintain and perpetuate wilderness resources, including plants and animals indigenous to the area, and to the extent consistent provide the above for opportunities for public use, enjoyment, and understanding, and the unique experiences dependent upon a wilderness setting, including maintaining access to these areas. The plan also directed managers to consider valid nonconforming uses and activities in the management of the wilderness so as to have the least possible adverse effect and/or wherever possible a positive effect (BLM 1980).

In addition, the plan established ACECs as a management tool for the protection of special values, including cultural resources, prehistoric archaeological features, wildlife habitat, and sensitive plant species. Prior to its designation, management prescriptions are developed for each proposed ACEC. These prescriptions are site specific and include actions that the BLM has the authority to carry out, as well as recommendations for actions that the BLM does not have direct authority to implement, such as cooperative agreements with other agencies and mineral withdrawals (BLM 1980).

Additional discussion regarding management prescriptions of specific ACECs are found in the relevant sections: 3.3, *Biological Resources – Vegetation*; 3.4, *Biological Resources – Wildlife*; and 3.5, *Cultural Resources*.

Northern and Eastern Colorado Desert Coordinated Management Plan

The NECO Plan Amendment to the CDCA Plan is a landscape-scale, multi-agency planning effort that protects and conserves natural resources while simultaneously balancing human uses of the California portion of the Sonoran Desert ecosystem. The planning area encompasses over 5 million acres and hosts 60 sensitive plant and animal species. Lands within the planning area are also popular for hiking, hunting, rockhounding, and driving for pleasure. Several commercial mining operations, livestock grazing, and utility transmission lines exist in the area as well (BLM 2002a).

The record of decision for the NECO Plan Amendment to the CDCA Plan, signed December 12, 2002, amended the 1980 CDCA Plan by formally incorporating the 23 wilderness areas (including the seven in the vicinity) established by the 1994 CDPA in the CDCA (BLM 2002b).

BLM Manual 6340, Management of Designated Wilderness Areas

This manual section identifies BLM's role in administering wilderness areas on public lands, provides policy guidance for BLM personnel, and sets the framework for wilderness management program development. It states the goals of wilderness management, as well as administrative functions and specific activities related to wilderness management (BLM 2012d).

BLM Handbook 1601-1 Land Use Planning Handbook

This handbook provides general guidance for the establishment of BLM administrative designations including those in the vicinity of the Project: ACECs and Back Country Byways. It specifically states that designated ACECs must be managed to protect the area and prevent irreparable damage or natural systems (BLM 2005).

BLM Handbook 8357-1, 1993 BLM Byways Handbook

This handbook provides specific direction for BLM's Back Country Byways program, including information of Byways nomination and designation, planning criteria, visitor safety, and specifications for entrance kiosks (BLM 1993).

BLM Instruction Memorandum No. 2011-154

This Instruction Memorandum directs offices to continue to conduct and maintain inventories regarding the presence or absence of wilderness characteristics, and to consider lands with wilderness characteristics in land use plans and when analyzing projects under NEPA (BLM 2011).

D.16.2 State

Special designations refer specifically to the BLM and are not relevant to the state government.

D.17 TRANSPORTATION AND TRAFFIC

Construction, operation, maintenance, and decommissioning of the Project could affect access and traffic flow patterns on public streets and highways. The following sections provide the Federal, state and local transportation and traffic laws, regulations, and policies pertinent to the Project.

D.17.1 Federal

The Code of Federal Regulations provides guidelines for regulations as they relate to the movement of hazardous materials via the Federal Motor Carrier Safety Administration. Federal Aviation Administration (FAA) guidelines and regulations are provided for aviation activities during the construction and post-construction periods.

D.17.2 State

The California Vehicle Code (CVC) and the California Streets and Highway Code outline regulations pertaining to the transportation of hazardous waste within the state. The following laws and regulations would be potentially applicable to the Project.

CVC, Div 2, Chapter 2.5; Div 6; Chap. 7; Div 13; Chap. 5; Div. 14.1; Chap 1 & 2; Div. 14.8; Div. 15

These regulations pertain to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials.

California Streets and Highway Code, Div 1, Chap 3; Div 2 Chap 5.5

These regulations cover the care and protection of state and county highways and provisions for the issuance of written permits.

CVC Section 353

This regulation defines hazardous materials.

CVC Sections 2500-2505

This regulation authorizes the issuance of licenses for the transport of hazardous materials.

CVC Sections 13369, 15275 and 15278

These regulations address the licensing of drivers and the classification of licenses required for the operation of particular types of vehicles. The regulations also require certificates permitting operation of vehicles transporting hazardous materials.

CVC Sections 31303-31309

These regulations address the highway transport of hazardous materials, the routes used, and restrictions on those facilities.

CVC Sections 31600-31620

These regulations control the transportation of explosive materials.

CVC Sections 32000-32053

These regulations standardize the licensing of carriers of hazardous materials, including noticing requirements.

CVC Section 32100-32109

These regulations establish special requirements for the transportation of inhalation hazards and poisonous gases.

CVC Sections 34000-34121

These regulations establish special requirements for the transportation of flammable and combustible liquids over public roads and highways.

CVC Section 34500 et seq.

These regulations address the safe operation of vehicles, including those that are used for the transportation of hazardous materials.

CVC Sections 35780

These regulations require permits for any load exceeding California Department of Transportation (Caltrans) weight, length, or width standards for public roadways.

California Streets and Highway Code, Div 1, Chap 3; Div 2 Chap 5.5

These regulations cover the care and protection of state and county highways and provisions for the issuance of written permits.

California Health and Safety Code Section 25160 et seq.

These regulations require that an authorized representative of the generator or facility operator that is responsible for loading hazardous waste into a transport vehicle shall, prior to loading, ensure that the driver of the transport vehicle is in possession of the appropriate class of driver's license and any endorsements required to operate the transport vehicle with the intended load.

California Streets and Highways Code Sections 117, 660-695, and 700-711

These regulations govern right-of-way (ROW) encroachment and the granting of permits for encroachments on state highways and freeways.

California Streets and Highways Code Sections 1450, 1460 et seq., and 1480 et seq.

These regulations govern ROW encroachment and the granting of permits for encroachments on county roads.

California Government Code Sections 65352, 65940, and 65944

These regulations require evaluation of compatibility with military activities for any land use proposal located near a military installation or airspace.

Caltrans Encroachment Permit

The use of state highways for purposes other than transportation purposes requires an encroachment permit, which an applicant can obtain through submission of Caltrans form TR-0100. This permit is required for utilities, developers, and non-profit organizations for use of the state highway system to conduct activities other than transportation (e.g., landscape work, utility installation, film production) within the ROW. The application would be forwarded to Caltrans District 8, whose jurisdiction includes the DQSP site. Part 5 of the Caltrans Traffic Manual provides Traffic Control Devices for Low-Volume Roads (Caltrans 2014). Additionally, the transport of oversize or overweight loads would require approval from Caltrans.

Caltrans Traffic Impact Study

Caltrans reviews Federal, state, and local agency development projects and land use change proposals for their potential impact to state highway facilities. The applicability and scope of a traffic impact study are presented in the Caltrans Guide for the Preparation of Traffic Impact Studies (Caltrans 2002).

D.17.3 Local

2011 Riverside County Congestion Management Program

Riverside County's Congestion Management Plan specifies that all Congestion Management Plan roadways operate at a Level of Service (LOS) of "E" or better. All state highways and principal arterials are Congestion Management Plan roadways. I-10 and SR-78 are the only Congestion Management Plan roadways in the Project study area (RCTC 2011). The Congestion Management Plan was first established in 1990 under Proposition 111.

Proposition 111 established a process for each metropolitan county in California to designate a Congestion Management Agency that would be responsible for development and implementation of the Congestion Management Plan within county boundaries. The Riverside County Transportation Commission (RCTC) was designated as the Congestion Management Agency in 1990 and, therefore, prepares the Congestion Management Plan updates in consultation with the Technical Advisory Committee, which consists of local agencies, the County of Riverside, transit agencies, and subregional agencies.

The RCTC's adopted minimum LOS threshold is LOS "E." Therefore, when a Congestion Management Plan street or highway segment falls to "F," a deficiency plan would be required. Preparation of a deficiency plan would be the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency would also be required to coordinate with the development of the plan. The plan must contain mitigation measures, including consideration of Transportation Demand Management strategies and transit alternatives, and a schedule for mitigating the deficiency.

Regional Comprehensive Plan and Regional Transportation Plan

The Southern California Association of Government's (SCAG's) Intergovernmental Review section, part of the Environmental Planning Division of Planning and Policy, is responsible for performing consistency review of regionally significant local plans, projects, and programs. Regionally significant projects are required to be consistent with SCAG's adopted regional plans and policies, such as the Regional Comprehensive Plan and the Regional Transportation Plan. The criteria for projects of regional significance are outlined in state CEQA Guidelines Sections 15125 and 15206. According to the SCAG Intergovernmental Review Procedures Handbook, "new or expanded electrical generating facilities and transmission lines" qualify as regionally significant projects.

Policy 3.05: *Encourage patterns of urban development and land use which reduce costs on infrastructure construction and make better use of existing facilities.*

Policy 3.14: *Support local plans to increase density of future development located at strategic points along the regional commuter rail, transit systems, and activity centers.*

Policy 3.16: *Encourage developments in and around activity centers, transportation corridors, underutilized infrastructure systems, and areas needing recycling and redevelopment.*

Policy 3.17: *Support and encourage settlement patterns which contain a range of urban densities.*

Policy 3.18: *Encourage planned development in locations least likely to cause adverse environmental impact.*

Policy RTP G5: *Protect the environment, improve air quality and promote energy efficiency.*

Policy RTP G6: *Encourage land use and growth patterns that complement our transportation investments and improve the cost-effectiveness of expenditures.*

Policy GV P1.1: *Encourage transportation investments and land use decisions that are mutually supportive.*

Policy GV P4.2: *Focus development in urban centers and existing cities.*

Policy GV P4.3: *Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution and significantly reduce waste.*

Policy GV P4.4: *Utilize "green" development techniques.*

Riverside County General Plan

The Riverside County General Plan (Riverside County 2015a) is applicable to all unincorporated lands within Riverside County. Countywide policies that address traffic and transportation within the County boundaries are located in the Circulation and Land Use Elements of the County's General Plan (Riverside County 2015a), and include:

Circulation Element (C)

Policy C 2.1. The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan (Figure-1) which are currently County maintained, or are intended to be accepted into the County maintained roadway system:

LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.

LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.

LOS E may be allowed by the Board of Supervisors within designated areas where transit-oriented development and walkable communities are proposed.

Notwithstanding the forgoing minimum LOS targets, the Board of Supervisors may, on occasion by virtue of their discretionary powers, approve a project that fails to meet these LOS targets in order to balance congestion management considerations in relation to benefits, environmental impacts and costs, provided an Environmental Impact Report, or equivalent, has been completed to fully evaluate the impacts of such approval. Any such approval must incorporate all feasible mitigation measures, make specific findings to support the decision, and adopt a statement of overriding considerations.

Policy C 2.2. Require that new development prepare a traffic impact analysis as warranted by the Riverside County Traffic Impact Analysis Preparation Guidelines or as approved by the Director of Transportation. Apply level of service targets to new development per the Riverside County Traffic Impact Analysis Preparation Guidelines to evaluate traffic impacts and identify appropriate mitigation measures for new development.

Policy C 2.3. Traffic studies prepared for development entitlements (tracts, plot plans, public use permits, conditional use permits, etc.) shall identify project related traffic impacts and determine the "significance" of such impacts in compliance with CEQA and the Riverside County Congestion Management Program Requirements.

Policy C 20.6. Control dust and mitigate other environmental impacts during all stages of roadway construction.

Policy C 20.15. Implement National Pollutant Discharge Elimination System Best Management Practices relating to construction of roadways to control runoff contamination from affecting the groundwater supply.

Land Use Element (LU)

Policy LU 7.4. Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.

Palo Verde Valley Area Plan

The applicable policy related to traffic and transportation included with the PVVAP is provided below (Riverside County 2015b).

Policy PVVAP 7.2. Maintain Riverside County's roadway Level of Service standards as described in the Level of Service section of the General Plan Circulation Element.

Riverside County Municipal Code Title 10, Chapter 10.08, Sections 10.08.010 – 10.08.180

These regulations establish requirements and permits for oversize and overweight vehicles.

Riverside County Ordinance No. 460

This ordinance specifies that all work shall conform to the requirements of the Riverside County Transportation Department Subdivision Regulations.

Riverside County Ordinance No. 461

This ordinance specifies that all work shall conform to the requirements of the Riverside County Transportation Department Road Improvement Standards and Specifications.

Riverside County Ordinance No. 500.1

This ordinance specifies the permissible weight of vehicles on unimproved County highways.

Riverside County Ordinance No. 524.1

This ordinance regulates oversize and overweight vehicles and loads.

Riverside County Ordinance No. 846

This ordinance specifies the permissible vehicle weight in the community of Mesa Verde/County Service Area (CSA) 122. Pursuant to California Vehicle Code § 35712, any commercial vehicle exceeding a manufacturer's gross vehicle weight rating of 14,000 pounds is prohibited from using the local streets within the community of Mesa Verde and CSA 122 as identified in the restricted list. Certain exemptions apply to commercial vehicles owned by a public utility or a contractor while necessarily in use in the construction, installation, or repair of any public utility are exempt from the vehicle weight restriction.

D.18 UTILITIES AND PUBLIC SERVICES

D.18.1 Federal

Safe Drinking Water Act

Under the Safe Drinking Water Act (SDWA) (Public Law 93-523), passed in 1974, the USEPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by USEPA primary and secondary Maximum Contaminant Levels (MCLs) that are applicable to treated water supplies delivered to the distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the SDWA enacted in 1986 established an accelerated schedule for setting MCLs for drinking water. USEPA has delegated to the California Department of Health Care Services (CDHCS) the responsibility for administering California's drinking-water program. The State Water Resources Control Board is accountable to USEPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by USEPA. The California Department of Public Health (CDPH) provides laboratory support that ensures the public's safety from unsafe drinking water. The applicable state primary and secondary MCLs for this Project are set forth in 22 CCR §64431 inorganic chemicals), and §64444 (organic chemicals – both volatile and non-volatile and including herbicides).

D.18.2 State

California Government Code §4216.2 Notification of Underground Work

California Government Code §4216.2 requires excavators to contact a regional notification center at least two working days before, but not more than 14 calendar days prior to beginning excavation work. Notification is required to be completed for all areas that are known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the excavator. If practical, the excavator is required to delineate, with white paint or other acceptable markings, the area to be excavated. Additional restrictions are provided for locations within 10 feet of a high priority subsurface installation. Additional provisions are applicable to emergency situations.

14 CCR Division 7.3

Title 14 of the CCR provides minimum requirements for solid waste handling and disposal within the state. The regulations implement standards for the disposal and storage of solid waste, for nonhazardous wastes, and including solid wastes from industrial sources. Specific requirements are included for the handling and disposal of construction and demolition wastes, nonhazardous contaminated soil, waste tires, nonhazardous ash, and inert debris. Additional requirements are provided for transfer and processing facilities, siting and design standards, operation, and record keeping and reporting.

22 CCR Division 4.5

Title 22 of the CCR discusses an array of requirements with respect to the disposal and recycling of hazardous and universal wastes. Specific standards and requirements are included for the identification, collection, transport, disposal, and recycling of hazardous wastes. Additional standards are included for the collection, transport, disposal and recycling of universal wastes, where universal wastes are defined as those wastes identified in 22 CCR §66273.9, including batteries, electronic devices, mercury containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements include recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility. 22 CCR Division 4.5 also provides restrictions and standards relevant to waste destination facilities, and provides authorization requirements for various waste handlers. Note that Title 22 includes California's Universal Waste Rule, as well as other additional waste handling and disposal requirements.

27 CCR Division 2

Title 27 of the CCR implements regulations of CalRecycle and the State Water Resources Control Board (SWRCB), with respect to disposal of wastes on land. The regulations implement a waste classification and management system, which determines whether or not wastes are compatible with containment features of specific disposal facilities, and whether or not wastes are considered hazardous. Additional requirements are included for the waste disposal sites, including construction standards, liner requirements, siting criteria, and operational management requirements. Water quality monitoring requirements are also included, along with associated contamination response programs. Finally, disposal facility closure and post closure

requirements, compliance with reporting programs, and financial assurance requirements are also included.

Integrated Waste Management Act

The Integrated Waste Management Act was enacted in 1989, as AB 939. The Act required each of the cities and unincorporated portions of counties throughout the state of California to divert a minimum of 25 percent of solid waste from landfills by 1995 and 50 percent by 2000. To attain these goals for reductions in disposal, the Act established a planning hierarchy utilizing integrated solid waste management practices. The Act resulted in the creation of the California Integrated Waste Management Board, which is now known as CalRecycle. Under the Act, jurisdictions also have to submit solid waste planning documentation to CalRecycle. The Act also set into place a comprehensive statewide system of permitting, inspections, and maintenance for solid waste facilities, and authorized local jurisdictions to impose fees based on the types and amounts of waste generated.

California Revenue and Taxation Code § 73

California Revenue and Taxation Code § 73 allows property tax exclusion for certain types of solar energy systems installed before December 31, 2016. This section was amended in 2008 to include exemptions for active solar energy systems incorporated by an owner-builder in the initial construction of a new building that the owner-builder does not intend to occupy or us e. Qualifying active solar energy systems are defined as those that are thermally isolated from living space or any other area where the energy is used, to provide for the collection, storage, or distribution of solar energy. These include solar space conditioning systems, solar water heating systems, active solar energy systems, solar-process heating systems, photovoltaic systems, solar thermal electric systems, and solar mechanical energy.

Components included under the exclusion include storage devices, power conditioning equipment, transfer equipment, and parts. Pipes and ducts that are used to carry both solar energy and energy derived from other sources qualify for the exemption only to the extent of 75 percent of their full cash value. Likewise, dual-use equipment for solar-electric systems qualifies for the exclusion only to the extent of 75 percent of its value.

Assembly Bill X1 15, signed by the California governor in June 2011, modified and extended existing state law excluding an "active solar energy system" from calculation of cash value subject to property taxation. An active solar energy system includes PV panels, inverters, and other improvements necessary to deliver electric power for transmission or final use. The exclusion applies to new systems constructed prior to January 1, 2017, and remains in effect until a change in ownership occurs.

Education Code §17620

Education Code § 17620 allows a school district to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district for the purpose of funding construction or reconstruction of school facilities, provided the district can show justification for the fees. California Government Code (GC) §65995 limits the fee to a statutory fee unless a school district conducts a Facility Needs Assessment (GC §65995.6) and meets

certain conditions. The administering agent implementing school impact fees for the Project is the Palo Verde Unified School District.

California Government Code §§ 65995-65998 (amended by State Bill 50)

California GC §§ 65995-65998 limits fees, charges, dedications, or other requirements for the construction or reconstruction of school facilities. State Bill 50, adopted in 1998, imposed limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development. In the case of industrial construction, the amount of fees and/or charges levied under Education Code § 17620 with support of a Facilities Needs Assessment may not exceed $0.31 per square foot of covered, enclosed space. Development of the Project may require school impact fees.

California Assembly Bill 1826

Effective January 1, 2019, Assembly Bill 1826 requires businesses that generate four cubic yards or more of commercial solid waste per week to arrange for recycling services specifically for organic waste.

D.18.3 Local

Riverside County General Plan

The Riverside County General Plan (Riverside County 2015a) does not have an element that specifically addresses public services and utilities. However, the Plan addresses safety issues through the Safety Element. Issues addressing open space and land use are discussed in the Plan's Multipurpose Open Space Element and the Land Use Element (LU) and include:

Land Use Element

Policy LU 5.1. Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, transportation systems, and fire/police/medical services.

Riverside County Ordinance No. 659

This ordinance creates development impact fees "in order to effectively implement the Riverside County Comprehensive General Plan, manage new residential, commercial, and industrial development, and address impacts caused by such development" by providing funds for the construction of new or expanded public service facilities and open space.

Riverside County Countywide Integrated Waste Management Plan (CIWMP)

This CIWMP was prepared by the County to comply with the requirements of AB 939. The CIWMP requires that the County update their landfill disposal capacity annually and certify that they have at least 15 years of remaining disposal capacity.

D.19 VISUAL RESOURCES

D.19.1 Federal

Federal Land Policy and Management Act

Section 102(a)(8) of the Federal Land Policy and Management Act of 1976 (FLPMA), 43 United States Code (U.S.C.) § 1701(a)(8), states that "...the public lands [are to] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." Section 103(c) of the Act, 43 U.S.C. § 1702(c), identifies "scenic values" as one of the resources for which public land should be managed. Section 201(a), 43 U.S.C. § 1711(a), states that "[t]he Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including . . . scenic values)." Section 505(a)(ii) requires that "each right-of-way shall contain terms and conditions which will… minimize damage to scenic and esthetic values." 43 U.S.C. § 1765(a) (ii).

CDCA Plan

Under FLPMA §601, the BLM has developed the CDCA Plan to "provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality." Central to the CDCA Plan is the establishment of Multiple Use Classes that govern the management of the public lands based on the sensitivity of the resources and types of uses for each geographic area. As discussed in greater detail in Section 3.10, *Lands, Realty, and Agricultural and Forestry Resources*, multiple use classes are divided into four categories, each of which have specific guidelines for the management of specific resource or activity areas contained and discussed in each of the CDCA Plan Elements. Lands within the Project area are designated Multiple-Use Class M (Moderate), which allows energy and utility development (BLM 1980).

There is no stand-alone visual resource plan element within the CDCA; however, visual resources values are addressed within the recreation element of the CDCA Plan. According to the recreation element, the BLM will take the following actions to effectively manage for activities involving the alteration of the natural character of the landscape (BLM 1980):

1. The appropriate levels of management, protection, and rehabilitation on all public lands in the CDCA will be identified, commensurate with visual resource management objectives in the multiple use class guidelines.
2. Proposed activities will be evaluated to determine the extent of change created in any given landscape and to specify appropriate design or mitigation measures using the BLM's contrast rating process.

The contrast rating process is a tool used to determine the extent of visual impact that proposed resource management activities would create in a landscape. It serves as a guide for reducing visual impacts to acceptable levels as defined by the visual management objectives and multiple use class guidelines. Applicable visual resource management objectives for a Class III area are defined in Table 3.19-2. The visual contrast rating process is further discussed in Section 4.19.

D.19.2 State

No applicable state statutes, regulations, plans, or standards related to visual resources were found.

D.19.3 Local

The Project would be subject to visual policies from the Riverside County General Plan (Riverside County 2015a) and the Palo Verde Valley Area Plan (Riverside County 2015b).

Riverside County General Plan

The Riverside County General Plan (Riverside County 2015a) is applicable to all unincorporated lands within Riverside County. Under the Riverside County General Plan, areas that are visible to the general public and considered visually attractive are deemed to be scenic resources, including scenic corridors, natural landmarks and prominent or unusual features of the landscape (Riverside County 2015a). Countywide policies that seek to preserve visual quality are located in the Land Use Element, Open Space Element, and Circulation Element of the County's General Plan, and include:

Land Use Element (LU)

Policy LU 7.4. Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.

Policy LU 14.1. Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.

Policy LU 14.3. Ensure that the design and appearance of new landscaping, structures, equipment, signs or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment.

Policy LU 14.4. Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways.

Policy LU 14.5. Require "new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground."

Policy LU 30.8. Require that industrial development be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area.

Open Space and Circulation Element (OS)

The Public Facilities area plan land use designation provides for the development of private uses with similar characteristics to public uses and includes utility facilities such as public and private electric generating station and corridors. Privately held uses with public facility characteristics are not required to be designated as Public Facilities, but are eligible to be so designated based on site-specific reviews of the characteristics of the use in question.

Policy OS 21.1. Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.

Policy OS 22.1. Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses.

Policy OS 22.4. Impose conditions on development within scenic highway corridors requiring dedication of scenic easements consistent with the Scenic Highways Plan, when it is necessary to preserve unique or special visual features.

Policy C 25.2. Locate new and relocated utilities underground when possible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.

Scenic Corridors

I-10 is not a state- or county-designated scenic highway; however, it has been identified by Riverside County in its Circulation Element as eligible for designation as a scenic corridor. The County has indicated in its General Plan Land Use Element that I-10 should be designated a scenic highway and has developed General Plan scenic corridor policies. These policies seek to maintain resources in corridors along scenic highways. Policies for Scenic Corridors include:

- Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.
- Incorporate riding, hiking, and bicycle trails and other compatible public recreational facilities within scenic corridors.
- Ensure that the design and appearance of new landscaping, structures, equipment, signs, or grading within Designated and Eligible State and County Scenic Highway corridors are compatible with the surrounding scenic setting or environment.
- Maintain at least a 50-foot setback from the edge of the right-of-way (ROW) for new development adjacent to designated and eligible State and County Scenic Highways.
- Require new or relocated electric or communication distribution lines that would be visible from Designated and Eligible State and County Scenic Highways to be placed underground.
- Prohibit off-site outdoor advertising displays that are visible from Designated and Eligible State and County Scenic Highways.
- Require that the size, height, and type of on-premise signs visible from Designated and Eligible State and County Scenic Highways be the minimum necessary for identification. The design, materials, color, and location of the signs shall blend with the environment, utilizing natural materials where possible.
- Avoid the blocking of public views by solid walls.

Palo Verde Valley Area Plan

Palo Verde Valley Area Plan (Riverside County 2015b) policies that address visual quality are located in the Local Circulation Policies, Scenic Highways, and include:

PVVAP 10.1. Protect the scenic highways in the Palo Verde Valley planning area from change that would diminish the aesthetic value of adjacent properties in accordance with the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.

Riverside County Airport Land Use Compatibility Plan

Several countywide policies related to glare are included in the Riverside County ALUCP. For more information on the ALUCP, please see Section 3.9, *Hazards and Hazardous Materials*.

D.20 WATER RESOURCES

D.20.1 Federal

Clean Water Act

The CWA established the basic structure for regulating discharges of pollutants into "waters of the United States." The act specifies a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff.

1. Sections 303 and 304, which provide for water quality standards, criteria, and guidelines.
2. Section 401 requires every applicant for a Federal permit or license for any activity that may result in a discharge to a water body to obtain a water quality certification that the proposed activity will comply with applicable water quality standards.
3. Section 402 regulates point- and nonpoint-source discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. In California, the SWRCB oversees the NPDES program, which is administered by the Regional Water Quality Control Boards (RWQCBs). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. Anti-backsliding requirements provided for under CWA §§402(o)(2) and 303(d)(4) prohibit slackening of discharge requirements and regulations under revised NPDES permits. With isolated/limited exceptions, these regulations require effluent limitations in a reissued permit to be at least as stringent as those contained in the previous permit.
4. Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into waters of the U.S., including some wetlands. Activities in waters of the U.S. that are regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry. The Los Angeles District of the USACE provides review and permitting services for this Project.

Executive Order 11988 and the Federal Emergency Management Agency (FEMA)

Under Executive Order 11988, FEMA is responsible for management of floodplain areas. FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps that identify which land areas are subject to flooding.

These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedance probability (i.e., the 100-year flood event).

Safe Drinking Water Act

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, the USEPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by USEPA primary and secondary Maximum Contaminant Levels (MCLs) that are applicable to treated water supplies delivered to the distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the SDWA enacted in 1986 established an accelerated schedule for setting MCLs for drinking water. USEPA has delegated to the CDPH the responsibility for administering California's drinking-water program. DHS is accountable to USEPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by USEPA. The applicable state primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the California Code of Regulations.

Energy Independence and Security Act, Section 438

Under Section 438 of the Energy Independence and Security Act of 2007 (EISA), Federal agencies are required to reduce stormwater runoff from Federal development and redevelopment projects to protect water resources. Federal agencies can comply using a variety of stormwater management practices often referred to as "green infrastructure" or "low impact development" practices, including reducing impervious surfaces and using vegetative practices, porous pavements, cisterns and green roofs.

BLM Water Rights Manual 7250

The BLM Water Rights Manual 7250 establishes policy and guidance for locating, perfecting, documenting, and protecting BLM-administered water rights necessary to manage and conserve the economic and resource values of the public lands. An objective of the BLM eater rights program is to ensure the availability of water for public land management purposes by acquiring and protecting BLM-administered water rights, as part of an overall strategy that may include other cooperative techniques for insuring water availability.

D.20.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act defines "water quality goals" as the allowable "limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." Thus, water quality goals are intended to protect the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. Water quality objectives apply to both Waters of the United States and Waters of the State.

Water Quality Control Plans

The SWRCB requires individual RWQCBs to develop Water Quality Control Plans (also known as Basin Plans) designed to preserve and enhance water quality and protect the beneficial uses of all Regional waters. Specifically, Water Quality Control Plans designate beneficial uses for surface waters and groundwater, set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, and describe implementation programs to protect all waters in the Regions. In addition, Water Quality Control Plans incorporate by reference all applicable state and Regional Board plans and policies, and other pertinent water quality policies and regulations. The Project is under the jurisdiction of the Water Quality Control Plans of the Colorado River Regional Water Quality Control Board.

Colorado River Regional Water Quality Control Plan

The Colorado River RWQCB's Water Quality Control Plan establishes water quality objectives, including narrative and numerical standards that protect the beneficial uses of surface and ground waters in the region. The Water Quality Control Plans describes implementation activities and other control measures designed to ensure compliance with statewide plans and policies, and to provide comprehensive water quality planning.

Beneficial water uses are of two types: consumptive and non-consumptive. Consumptive uses are those normally associated with human activities, primarily municipal, industrial and irrigation uses that consume water and cause corresponding reduction and/or depletion of water supply. Non-consumptive uses include swimming, boating, waterskiing, fishing, hydropower generation, and other uses that do not significantly deplete water supplies. Historical beneficial uses of water within the Colorado River Basin Region have largely been associated with irrigated agriculture and mining. Industrial use of water has become increasingly important in the region, particularly in the agricultural areas.

With respect to present beneficial uses, agricultural use is the predominant beneficial use of water in the Colorado River Region, with the major irrigated acreage being located in the Coachella, Imperial, and Palo Verde valleys. The next largest use of water is for municipal and industrial purposes. The third major category of beneficial use, recreational use of surface waters, represents another important segment of the region's economy. The Colorado River Basin Region functions as a portion of the larger Colorado River watershed, which supplies water for agricultural and urban uses, fisheries, hydroelectric power production, recreation, and international treaty obligations.

According to the Water Quality Control Plan, all surface and ground waters are considered to be suitable, or potentially suitable, for municipal or domestic water supply with the exception of:

1. Surface and ground waters where the TDS exceed 3,000 mg/L, and the source is not reasonably expected by the RWQCB to supply a public water system, or
2. There is contamination, either by natural process or human activity, that cannot be treated for domestic use using either best management practices or best economically achievable treatment practices, or
3. The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. The SGMA empowers local agencies to form Groundwater Sustainability Agencies (GSAs) to manage basins sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for crucial groundwater basins in California.

California Fish and Game Code §1601-1603

Sections 1601-1603 of the CDFW Fish and Game Code protect the natural flow, bed, channel, and bank of any river, stream, or lake designated by the CDFW, in which there is at any time an existing fish or wildlife resource, or from which these resources derive benefit. General Project plans must be submitted to the CDFW in sufficient detail to indicate the nature of a project for construction, if the project would:

- Divert, obstruct, or change a streambed, bank, or riparian zone.
- Use material from the streambeds.
- Result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream.

The Inland Deserts Region of the CDFW serves Riverside County.

22 CCR §§ 64400.80-64445

These CCR sections require monitoring for potable water wells, defined as non-transient, non-community water systems (serving 25 people or more for more than 6 months). Regulated wells must be sampled for bacteriological quality once a month and the results submitted to the CDPH for review and comment. The wells must also be monitored for inorganic chemicals once and organic chemicals quarterly during the year designated with the year designation based on historical monitoring frequency and laboratory capacity.

27 CCR §§ 20200

27 CCR §§ 20200 *et seq.* provides a waste classification system that applies to wastes that cannot be discharged to waters of the state. Applicable facilities include evaporation ponds, as well as various other types of disposal.

California Water Code §13751

California Water Code §13751 requires a Report of Well Completion to be filed with the DWR within 60 days of well completion. New wells must comply with DWR Well Standards as described in Water Resources Bulletins 74-81 and 74-90.

Construction Stormwater Program

The SWRCB and the nine RWQCBs implement water quality regulations under the Federal CWA and the California Porter-Cologne Water Quality Control Act. Existing water quality regulations require compliance with the NPDES for discharges of stormwater runoff associated with construction activity.

Dischargers are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction and Land Disturbance Activities (Construction General Permit, 2009-0009-DWQ). Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) that shows the construction site perimeter, existing and proposed structures, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the Project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a monitoring program for visible and non-visible pollutants and changes in water quality, such as substantial alteration in pH (a measure of acid and base properties).

Senate Bill 610

SB 610 requires that a Water Supply Assessment (WSA) be prepared for certain projects subject to CEQA that will use water. The WSA is required to address the sources of water for the Project, and an assessment of the sufficiency of those sources to serve the Project over a period of 20 years.

D.21 WILDLAND FIRE

D.21.1 Federal

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) requires utilities to adopt and maintain minimum clearance standards between vegetation and transmission voltage power lines. These clearances vary depending on voltage. In most cases, however, the minimum clearances required in state regulations are greater than the Federal requirement. In California for example, the state has adopted General Order 95 rather than the NERC Standards as the electric safety standard for the state. Since the state regulations meet or exceed the FERC standards, the FERC requirements are not discussed further in this section, as compliance with the state requirements will ensure that the Federal requirements are met.

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995 and updated in 2001 by the National Wildfire Coordinating Group, a Federal multi-agency group that establishes

consistent and coordinated fire management policy across multiple Federal jurisdictions. An important component of the Federal Wildland Fire Management Policy is the acknowledgement of the essential role of fire in maintaining natural ecosystems. The Federal Wildland Fire Management Policy and its implementation are founding on the following guiding principles:

1. Firefighter and public safety is the first priority in every fire management activity.
2. The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.
3. Fire management plans, programs, and activities support land and resource management plans and their implementation.
4. Sound risk management is a foundation for all fire management activities.
5. Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
6. Fire management plans and activities are based upon the best available science.
7. Fire management plans and activities incorporate public health and environmental quality considerations.
8. Federal, state, tribal, local, interagency, and international coordination and cooperation are essential.
9. Standardization of policies and procedures among Federal agencies is an ongoing objective.

International Fire Code

Created by the International Code Council, the International Fire Code addresses a wide array of conditions hazardous to life and property including fire, explosions, and hazardous materials handling or usage. The International Fire Code places an emphasis on prescriptive and performance-based approaches to fire prevention and fire protection systems. Updated every 3 years, the International Fire Code uses a hazards classification system to determine the appropriate measures to be incorporated in order to protect life and property (often, these measures include construction standards and specialized equipment). The International Fire Code uses a permit system based on hazard classification to ensure that required measures are instituted.

North American Electric Reliability Corporation Standards

The NERC is a nonprofit corporation comprising 10 regional reliability councils. The overarching goal of NERC is to ensure the reliability of the bulk power system in North America. To achieve its goal, the NERC develops and enforces reliability standards, monitors the bulk power systems, and educates, trains, and certifies industry personnel (NERC 2014). In order to improve the reliability of regional electric transmission systems and in response to the massive widespread power outage that occurred on the Eastern Seaboard, NERC developed a transmission vegetation management program that is applicable to all transmission lines operated at 200 kV and above to lower voltage lines designated by the Regional Reliability Organization as critical to the reliability of the electric system in the region. The plan, which became effective

on April 7, 2006, establishes requirements of the formal transmission vegetation management program, which include identifying and documenting clearances between vegetation and any overhead, ungrounded supply conductors, while taking into consideration transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain and elevation, and the effects of wind velocities on conductor sway (NERC 2006). The clearances identified must be no less than those set forth in the IEEE Standard 516-2003 (*Guide for Maintenance Methods on Energized Power Lines*).

Institute of Electrical and Electronics Engineers Standard 516-2003

The IEEE is a leading authority in setting standards for the electric power industry. Standard 516-2003, *Guide for Maintenance Methods on Energized Power Lines*, establishes minimum vegetation-to-conductor clearances in order to maintain electrical integrity of the electrical system.

D.21.2 State

California Fire Code

The California Fire Code is contained within Title 24, Chapter 9 of the CCR. Based on the International Fire Code, the California Fire Code is created by the California Buildings Standards Commission and regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. Similar to the International Fire Code, the California Fire Code and the CBC use a hazards classification system to determine the appropriate measures to incorporate to protect life and property.

Title 14 CCR §§1250-1258, Fire Prevention Standards for Electric Utilities, provides specific exemptions from electric pole and tower firebreak and electric conductor clearance standards, and specifies when and where standards apply.

California Health and Safety Code

State fire regulations are established in §13000 of the California Health and Safety Code. The section establishes building standards, fire protection device equipment standards, high-rise building and childcare facility standards, interagency support protocols, and emergency procedures. Also, §13027 states that the state fire marshal shall notify industrial establishments and property owners having equipment for fire protective purposes of the changes necessary to bring their equipment into conformity with, and shall render them such assistance as may be available in converting their equipment to, standard requirements.

California Public Resources Code

The Public Resources Code (PRC) includes fire safety regulations that apply to SRAs during the time of year designated as having hazardous fire conditions. During the fire hazard season, these regulations restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas.

PRC §4291 provides that a person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material, shall at all times maintain defensible space of 100 feet from each side and from the front and rear of the structure, but not beyond the property line.

PRC §§4292 and 4293 require that any person who owns, controls, operates, or maintains any electrical transmission or distribution line shall maintain a firebreak clearing around and adjacent to any pole, tower, and conductor that carries electric current as specified in the section.

California Strategic Fire Plan

The 2010 Strategic Fire Plan for California is the statewide plan for adaptive management of wildfire. The Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and the CAL FIRE. The central goals that are critical to reducing and preventing the impacts of fire revolve around both suppression efforts and fire prevention efforts. The key goals of the plan are:

1. Improved availability and use of information on hazard and risk assessment;
2. Land use planning: including general plans, new development, and existing developments;
3. Shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as Community Wildfire Protection Plans;
4. Establishing fire resistance in assets at risk, such as homes and neighborhoods;
5. Shared vision among multiple fire protection jurisdictions and agencies;
6. Levels of fire suppression and related services; and
7. Post-fire recovery.

The plan puts emphases on pre-fire adaptive management of risk, including measures such as fuelbreaks, defensible space, and other fuel reduction strategies. The Fire Plan does not contain any specific requirements or regulations. Rather, it acts as an assessment of current fire management practices and standards and makes recommendations on how best to improve the practices and standards in place (CAL FIRE 2010).

Fire Hazard Severity Zones

CAL FIRE mapped FHSZs in Riverside County based on fuel loading, slope, fire weather, and other relevant factors under the direction of PRC §§4201-4204 and Government Code §§51175-89. FHSZs are ranked from moderate to very high and are categorized for fire protection as within a FRA under the jurisdiction of a Federal agency, within a SRA under the jurisdiction of CAL FIRE, or within a LRA under the jurisdiction of a local agency.

Public Resources Code §§4292-4293, Powerline Hazard Reduction

PRC §4292 requires and presents guidelines for a 10-foot firebreak consisting of a clearing of not less than 10 feet in each direction from the outer circumference of the base of power poles. PRC §4293 requires and presents guidelines for maintaining a 4-foot clearance in all directions between all vegetation and all conductors carrying between 2.4 and 72 kV, and a 10-foot clearance for lines carrying over 110 kV. The proposed distribution line would operate at 34.5 kV, and the gen-tie line would operate at 230 kV.

14 California Code of Regulations, Sections 1250 – 1258, "Fire Prevention Standards for Electric Utilities"

14 CCR provides specific exemptions from electric pole and tower firebreak. 14 CCR also provides conductor clearance standards and specifies when and where standards apply. These standards address hazards that could be caused by sparks from conductors of overhead lines, or that could result from direct contact between the line and combustible objects. The proposed Project would be subject to these standards.

D.21.3 Local

Riverside County Fire Department Fire Prevention Standards

In accordance with the 2010 California Fire Code, the RCFD incorporated the Fire Apparatus Access Roads standard (§503) and Knox Box Emergency Access System standard (§506) into its operational standards. Under these standards, all required building plans must be submitted to the RCFD for review and approval of access roads and points and Knox Box mounting location and position and operating standards prior to installation.

Riverside County General Plan

Safety Element (S)

Fire Hazards – Building Code and Performance Standards

Policy S 1.1. Mitigate hazard impacts through adoption and strict enforcement of current building codes, which will be amended as necessary when local deficiencies are identified.

Policy S 5.1. Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features through the following:

a) All proposed development and construction within Fire Hazard Severity Zones shall be reviewed by the Riverside County Fire and Building and Safety departments.

b) All proposed development and construction shall meet minimum standards for fire safety as defined in the Riverside County Building or County Fire Codes, or by County zoning, or as dictated by the Building Official and Management Agency based on building type, design, occupancy, and use.

c) In addition to the standards and guidelines of the California Building Code and California Fire Code fire safety provisions, continue to implement additional standards for high-risk, high occupancy, dependent, and essential facilities where

appropriate under the Riverside County Fire Code (Ordinance No. 787) Protection Ordinance. These shall include assurance that structural and nonstructural architectural elements of the building will not impede emergency egress for fire safety staffing/personnel, equipment, and apparatus, nor hinder evacuation from fire, including potential blockage of stairways or fire doors.

d) Proposed development and construction in Fire Hazard Severity Zones shall provide secondary public access, in accordance with Riverside County Ordinances.

e) Proposed development and construction in Fire Hazard Severity Zones shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the Riverside County Fire Chief.

Riverside County Brush Clearance

County of Riverside Ordinance No. 695 provides brush clearance requirements on unincorporated County land that are designed to reduce risks from wildland fires. The code requires that every owner, occupant, and person in control of any unimproved parcel of land clear vegetation on a 100-foot-wide strip of land at the boundary of the parcel adjacent to a roadway and/or a 100-foot-wide strip of land around any structures located on an adjacent improved parcel. The Riverside County Fire Department can require different clearance distances based upon a visual inspection of the parcel and factors including local weather conditions, fuel types, topography, and the environment where the property or adjoining structures are located.

Appendix E

Appendix E

APPENDIX E

RELATIONSHIP BETWEEN THE DESERT QUARTZITE SOLAR PROJECT PA/EIS/EIR AND THE DESERT RENEWABLE ENERGY CONSERVATION PLAN AND CONFORMANCE WITH CONSERVATION AND MANAGEMENT ACTIONS

APPENDIX E - RELATIONSHIP BETWEEN THE DESERT QUARTZITE SOLAR PROJECT PA/EIS/EIR AND THE DESERT RENEWABLE ENERGY CONSERVATION PLAN AND CONFORMANCE WITH CONSERVATION AND MANAGEMENT ACTIONS

1.0 Introduction

The Bureau of Land Management (BLM) issued the Desert Renewable Energy Conservation Plan (DRECP) in October, 2016. The DRECP amends the California Desert Conservation Area (CDCA) Plan, specifically with respect to natural resource conservation and renewable energy development. The DRECP provides a new framework under which lands in the CDCA are managed for resource conservation, and under which new applications for renewable energy projects are considered and evaluated.

Although the new framework is now in place as of October, 2016, the new management prescriptions are not applicable to the Desert Quartzite Solar Project (DQSP, or the Project), or to the analysis of the DQSP in this Environmental Impact Statement/Environmental Impact Report (EIS/EIR), for two reasons:

- According to the DRECP, renewable energy applications in the Riverside East Solar Energy Zone filed before June 30, 2009, including the application for DQSP, are not, and will not be, subject to the terms of the DRECP. The DRECP recognizes that the DQSP would not be subject to the DRECP due to its status as a "pending" right-of-way (ROW) application under the Western Solar Plan and its location within a SEZ (DRECP Section II.3.2.4, p. 68-69).
- The data collection, field surveys, and impact analyses for this EIS/EIR are based on BLM's requirements as of the date of the Notice of Intent, which was on March 6, 2015. The DRECP's designations and classifications were not issued until 18 months later.

Based on these factors, this EIS/EIR has been based on the management framework that was available under the CDCA Plan, and on BLM's renewable energy siting, data collection, and impact analysis requirements that were in place as of March 6, 2015. However, BLM has also considered and evaluated the effects of the DRECP changes on the impact analysis. The purpose of this Appendix is to summarize the changes that occurred under the DRECP, and to discuss how these changes would, or would not, have affected the impact analysis if the analysis had been performed under the new DRECP requirements.

2.0 BLM Land Use Allocations

One major effect of the DRECP was to modify BLM's land management use allocations that were operative under the CDCA Plan prior to October, 2016. These included:

- The Multiple-Use Classes (MUCs) that were previously in effect under the CDCA Plan, as well as previous land use allocations made for resource protection, including Areas of Critical Environmental Concern (ACECs) and Desert Wildlife Management Areas (DWMAs), have been replaced by a new classification system. Under the DRECP, land use allocations are now categorized as Development Focus Areas (DFAs), Variance

Process Lands (VPLs), General Public Lands, and Resource Conservation Areas. Lands have also been designated for recreation purposes.

- Under the previous CDCA Plan, no Visual Resource Management (VRM) classes had been established in the CDCA, and the designation and adoption of Interim VRM classes in response to a specific project was a BLM Field Office Manager decision. The DRECP has now established VRM Classes for the entire CDCA, including the Project area.

While these changes do not affect the physical resources on and around the DQSP site, they do affect how those resources are managed. The affected environment in which the DQSP is proposed (discussed in Chapter 3 of the EIS/EIR) includes physical resources such as wildlife and water resources. The analysis of Project impacts in Chapter 4 is, for some resources, based only on the direct impact of the Project on that physical resource. For instance, Section 4.3 quantifies the number of individuals of each special-status plant species that would be removed under each alternative. However, the impact analysis for other resources is based on how the Project conforms to BLM's requirements for management of that resource. For example, while Section 4.5 quantifies the impact of the Project on cultural resources, Section 4.16 evaluates the impact of the Project on the Mule Mountain ACEC, which was established for the protection of cultural resources. In this way, the EIS/EIR evaluates both the effect of the Project on a resource, as well as the effect of the Project on the status or management goals of an area established for protection of that resource. It is the status and management goals of these areas that have changed under the DRECP.

The DRECP does not affect how the EIS/EIR evaluates physical impacts to physical resources, but it does affect how the EIS/EIR evaluates impacts to land use status or management goals. Because the Project is not subject to DRECP, or to BLM's land use allocation changes made after March 6, 2015, the analysis of the impact of the Project on land use status or management goals is based on the land use status and management goals that were in place on March 6, 2015. The following subsections summarize the land use allocations that have changed, and how the changes do, or do not, affect the impact analysis in the EIS/EIR.

2.1 Onsite and Adjacent Land Use Allocations

Under the CDCA Plan, the Project area was designated as Multiple Use Class – Moderate (MUC-M). Section 4.10 of the EIS/EIR evaluates the conformance of the Project with this classification. In the DRECP, the Project site is designated as a DFA, which is an area where activities associated with solar, wind, and geothermal energy are allowed, streamlined, and incentivized. Because solar projects are allowed on DFA lands, the Project is in conformance with this new land use allocation.

Under the CDCA Plan, there was no formal VRM classification of the Project site, but the BLM Field Office Manager had assigned a Class III Interim VRM Objective to the site. Section 4.19 of the EIS/EIR evaluates the conformance of the Project with this classification. The DRECP designates the Project area as VRM Class IV. VRM Class IV allows for management activities and uses requiring major modifications to the natural landscape, while the objective of VRM Class III class is to partially retain the existing character of the landscape, and the level of change to characteristic landscape should be moderate. As a result, the analysis of the Project in Section 4.19 evaluates the Project against a more restrictive management objective, and is therefore an overly conservative analysis as compared to the analysis that would occur under the DRECP.

Under the CDCA Plan, there were no resource protection allocations, such as ACECs, DWMAs, Wilderness Areas, or Lands Managed for Wilderness Characteristics on the site. There were also no formal recreation designations for the site. Similarly, under the DRECP, no resource conservation or recreation designations have been made for the site, so no changes in impact analyses would have been needed in these areas.

2.2 Nearby Land Use Allocations

Under the CDCA Plan, land use allocations in the vicinity of the Project were designated according to the MUC system. The directly adjacent lands were designated the same as the Project site, as MUC-M. MUC-Limited (MUC-L) and MUC-Intensive (MUC-I) lands are also present in the Project vicinity. Section 4.10 of the EIS/EIR evaluated the impact of the Project within the context of the overall amount of MUC-M land within the Project vicinity. Under DRECP, the distinction between MUC-M, MUC-I, and MUC-L on the lands in the vicinity of the Project no longer exists. Instead, almost all lands have been designated for resource conservation, development, and/or recreation. Therefore, there is no correlative analysis under the DRECP. Although the analysis of the Project within the context of the MUC system is moot under the DRECP, there is no other analysis that would have been needed to be performed in its place.

Under both the CDCA Plan and DRECP, lands have been designated for resource conservation purposes. Section 3.16 of the EIS/EIR identified the locations of nearby areas designated for resource conservation, including ACECs, DWMAs, Wilderness Areas, Lands With Wilderness Characteristics, and Back Country By-Ways. In that analysis, the closest lands under each category were as follows:

- The closest ACEC was the Mule Mountains ACEC, designated for protection of cultural resources, one mile southwest of the Project;
- The closest DWMA was the Chuckwalla DWMA, designated for protection of the desert tortoise, approximately five miles west of the Project;
- The closest Wilderness Area was the Palo Verde Mountains, located more than 10 miles from the Project;
- The nearest land found to have wilderness characteristics was located on the eastern end of the Little Chuckwalla Mountains Wilderness Area, approximately 10 miles southwest of the Project site; and
- The nearest Back Country By-Way was the Bradshaw Trail, located four miles southwest of the Project.

Section 4.16 evaluated the impact of the Project on the designation status and management objectives of each of these areas. Section 4.4 evaluated the impact of the Project on wildlife in the ACECs and DWMAs, and Section 4.5 evaluated the direct and indirect impact of the Project on cultural resources, including those in the Mule Mountains ACEC. Section 4.14 evaluated the impact of the Project on recreation in these specially designated areas.

Under the DRECP, the boundaries of some of these areas have changed. The largest change, and that closest to the Project site, is that several of the ACECs west of the project, including the Mule Mountains ACEC, have been expanded and combined into a single ACEC. However, the change in the boundary was to the west, away from the Project area. None of the newly

designated areas is located closer to the Project site than was the case under the CDCA Plan prior to October, 2016. Tthere are no newly designated areas (under the DRECP) that would be impacted but are left unevaluated.

Under both the CDCA Plan and the DRECP, lands have been designated for recreation purposes. Section 4.14 of the EIS/EIR evaluated the impact of the Project on general recreation on BLM land, including OHV access to recreation areas, as well as on City of Blythe parks and recreation facilities. None of the general recreation opportunities or City of Blythe facilities have been changed as a result of the DRECP.

Section 3.14 identified the locations of nearby areas specially designated for recreation, including the Mule Mountains and Midland Long-Term Visitor Areas (LTVAs), campgrounds, and the Bradshaw Trail. Impacts to these areas were evaluated in Section 4.14. Under the DRECP, the new land use allocations included designation of both the Mule Mountains and Midland LTVAs as SRMAs. However, the boundaries or management objectives of these areas were not changed in a way that would make the current impact analysis inapplicable.

3.0 Conservation and Management Actions

The second major component of the DRECP was the implementation of Conservation and Management Actions (CMAs), which include a variety of project siting, impact mitigation, and BLM management requirements. CMAs were developed on a Land Use Plan Area (LUPA) - Wide basis, as well as specifically for Conservation Lands, DFAs, VPLs, and lands used for power transmission.

Because the DQSP is exempted from the DRECP, the CMAs are not applicable to the Project. However, to ensure that the impact analysis is complete, and resources are protected to the maximum extent practicable, BLM has performed an applicability analysis of the Project with respect to the CMAs. Because the Project is located wholly on DFA lands and includes transmission, the CMAs evaluated were those included in the LUPA-Wide, DFA, DFA/VPL, and TRANS categories.

The analysis, presented in Table B-1, includes a determination of whether the CMA would have applied to the project, if the Project had been subject to the DRECP. This includes an evaluation of whether the type of action covered by the CMA is within the scope of the Project, i.e., approval of a solar energy project. In addition, it includes a determination of whether the resource addressed by the CMA is present, or potentially impacted, on the Project site.

Following the applicability determination, the analysis included an evaluation of the design of the Project, the scope of the Applicant's field surveys and technical analyses, the Applicant's Proposed Measures, and the preliminary mitigation measures developed by the agencies with respect to each CMA. The evaluation was performed to verify that the resource conservation objectives of each CMA were met, whether changes could be made to Project design and technical analysis to improve conformance, and whether changes could be made to the preliminary mitigation measures, within the limitation that the Project is not legally subject to the CMAs.

In general, the analysis revealed that the Project design and/or mitigation measures satisfy applicable CMAs. In many cases, wording changes were made to mitigation measures to bring the language into line with the CMA language. In cases where no such changes are made, the

analysis describes why the Applicant is not required to modify the Project or mitigate potential impacts, or why the CMA does not apply.

4.0 Datasets

Another effect of the approval of the DRECP is that it based its analysis on region-wide datasets for identification of potentially-affected resources, and required use of these datasets by future Applicants. This included mapping of habitat and migration corridors for various wildlife and plant species. Many of the CMAs were, in turn, based on the relationship of the Project to the resources as they were presented in the datasets.

In general, the datasets used by the DRECP have no effect on the analysis of the Project in the EIS/EIR. However, the difference in datasets was an issue for the analysis of and sand dune vegetation impacts. For the DRECP, broad scale mapping of vegetation alliances was done by California Department of Fish and Wildlife (CDFW). The vegetation classification for the DRECP follows Federal Geographic Data Committee (FGDC) and National Vegetation Classification Standards (NVCS). In contrast, for the analysis in this EIS/EIR, the vegetation was mapped as vegetation communities, on a site-specific basis, by the Applicant under direction from BLM. Vegetation communities were characterized by the classification system used by Holland (1986) and the NECO Plan Amendment to the CDCA Plan (Evens and Hartman 2007), and cross-referenced with *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 2009), where appropriate.

To address this discrepancy, the text in Section 3.3.1.1 discusses the relationship between the two different systems, as well as the advantages and disadvantages of the use of each in the EIS/EIR analysis. The text also describes how the onsite mapping is correlated to the DRECP mapping, thus allowing evaluation of the conformance of the Project and EIS/EIR with the vegetation-specific CMAs. In reviewing these differences, BLM believes that the method used in the EIS/EIR adequately addresses the data needed to adequately conduct impact analysis of this resource.

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-1: Conduct a habitat assessment (see Glossary of Terms) of Focus and BLM Special Status Species' suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat (see Glossary of Terms) for Focus and BLM Special Status Species. If required by the relevant species specific CMAs, conduct any subsequent protocol or adequate presence/absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat. • BLM will not require protocol surveys in sites determined by the designated biologist to be unviable for occupancy of the species, or if baseline studies inferred absence during the current or previous active season. • Utilize the most recent and applicable assessment protocols and guidance documents for vegetation types and jurisdictional waters and wetlands that have been approved by BLM, and the appropriate responsible regulatory agencies, as applicable.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Survey protocols are described in the BRTR. The protocols and results for vegetation surveys are summarized in Section 3.3.1.2. The protocols and results for wildlife surveys are summarized in Section 3.4.1.1. All surveys were conducted in accordance with protocols in place at the time of the NOI, under the direction of BLM biologists assigned to the Project.		
LUPA-BIO-2: Designated biologist(s) (see Glossary of Terms), will conduct, and oversee where appropriate, activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measures VEG-1 through VEG-5 specify the qualifications, duties, and authorities of the Designated Biologist(s) and Monitor(s).		
LUPA-BIO-3: Resource setbacks (see Glossary of Terms) have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA. Allowable minor incursions (see Glossary of Terms), as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from: • The edge of each of the DRECP desert vegetation types, including but not limited to those in the riparian or wetland vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in **LUPA-BIO-1**). • The edge of the mapped riparian vegetation or the Federal Emergency Management Agency (FEMA) 100-year floodplain, whichever is greater, for the Mojave River. • The edge of the vegetation extent for specified Focus and BLM sensitive plant species. • The edge of suitable habitat or active nest substrates for the appropriate Focus and BLM Special Status Species.	Yes	No	Partial	Yes	No	Partial
			X			X
	The resources for which setback distances are established in DRECP CMAs, and which are potentially present in the Proposed Action area, include the Blue paloverde-Desert Ironwood Alliance (within the Madrean Warm Semi-Desert Wash Woodland/Scrub and Sonoran-Coloradan Semi-Desert Wash Woodland/Scrub; 200 foot setback), one BLM Sensitive plant species (Harwood's eriastrum; 0.25 miles), and the Burrowing owl (656 feet). The Project is not located near the Mojave River, so the second bullet does not apply. No Plant Focus species, as defined in Table 23, are present in the Project area. Setback distances for golden eagles and Swainson's hawk do not apply, because no nests were identified within the setback distances. Setback distances for Bendire's thrasher do not apply, because the site was determined to have low potential for this species.			No Alternatives would directly impact the Blue paloverde-Desert Ironwood Alliance. However, the Proposed Action would be situated within the 200 foot setback distance of an area of Blue paloverde-Desert Ironwood Alliance that is located outside of the Project footprint. Alternatives 2 and 3 would be located more than 200 feet away from the Blue paloverde-Desert Ironwood Alliance. Table 4.3-3 shows that all alternatives would directly impact Harwood's eriastrum. Section 4.4.3 discusses impacts of the Proposed Action to the Burrowing owl. The EIS/EIR mitigation measure WIL-9 specifies a setback requirement for Burrowing owl nests (656 feet), as specified in DFA-BIO-IFS-2, Table 22).		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-4: For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre- construction, construction, operations, and decommissioning activities. Species-specific seasonal restriction dates are described in the applicable CMAs. Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/project specific environmental analysis.	Yes	No	Partial	Yes	No	Partial
		X				
	A review of CMAs shows that seasonal restrictions are only required for Mohave ground squirrel (LUPA-BIO-IFS-38) and for birds nesting in vegetation alliances specified in Table 17 (LUPA-BIO-RIPWET-1). Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18. The Blue paloverde-Desert Ironwood Alliance (within the Madrean Warm Semi-Desert Wash Woodland/Scrub and Sonoran-Coloradan Semi-Desert Wash Woodland/Scrub specified in Table 17) is present outside in the area, but is avoided by the footprint of all alternatives.					
LUPA-BIO-5: All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about: • Site-specific biological and nonbiological resources. • Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources. • The required LUPA and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc. Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist. • Measures that personnel can take to promote the conservation of biological and nonbiological resources.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure VEG-6 describes the requirements for the Worker Environmental Awareness Program (WEAP).		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
LUPA-BIO-6: Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following: • Common Raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the Common Raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellant methods to avoid providing perches, nesting sites, and roosting sites for Common Ravens. • The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators. • Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species. • All activity work areas will be kept free of trash and debris. Particular attention will be paid to "micro-trash" (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site. In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.	X			X		
				• The Raven Management Plan is specified in Mitigation Measure WIL-5. • Mitigation Measure VEG-8 requires that dust control be performed with a minimum amount of water, to avoid formation of puddles. • Applicant-Proposed Measure APM-BIO-5 discusses the Applicant's Integrated Weed Management Plan, which has been reviewed and approved by the BLM Field Office. • Applicant-Proposed Measure APM-BIO-3 discusses the Construction BMPs, which include measures for managing trash and debris. Additional information is provided in Mitigation Measures VEG-8. However, neither of these measures discusses "micro-trash". • Mitigation Measure WIL-5 includes compensatory mitigation for the Regional Raven Management Program.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
LUPA-BIO-7: Where DRECP vegetation types or Focus or BLM Special Status Species habitats may be affected by ground- disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below: • Implement site-specific habitat restoration actions for the areas affected including specifying and using: • The appropriate seed (e.g., certified weed- free, native, and locally and genetically appropriate seed) • Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities) • Equipment • Timing (e.g., appropriate season, sufficient rainfall) • Location • Success criteria • Monitoring measures • Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands. • Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms), the cactus and yucca will be re-planted back to the original site. • Restore and reclaim short-term (i.e. 2 years or less, see Glossary of Terms) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/project specific environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.	X			X			The Applicant's Revegetation Plan has not yet been submitted. But its components are described throughout the EIS/EIR, including Section 2.3.6 (Decommissioning), 2.3.7.2 (Vegetation Management), 2.3.7.9 (Stormwater Management), Applicant-Proposed Measure BIO-4 (Vegetation Resources Management Plan), Mitigation Measure VEG-8.17 (Revegetation of Temporarily Disturbed Areas), and Mitigation Measure VIS-4 (Decommissioning and Site Restoration Plan).

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-8: All activities that are required to close and decommission the site (e.g., renewable energy activities) will specify and implement project-specific closure and decommissioning actions that meet the approval of BLM, and that at a minimum address the following: • Specifying and implementing the methods, timing (e.g., criteria for triggering closure and decommissioning actions), and criteria for success (including quantifiable and measureable criteria). • Recontouring of areas that were substantially altered from their original contour or gradient and installing erosion control measures in disturbed areas where potential for erosion exists. • Restoring vegetation as well as soil profiles and functions that will support and maintain native plant communities, associated carbon sequestration and nutrient cycling processes, and native wildlife species. • Vegetation restoration actions will identify and use native vegetation composition, native seed composition, and the diversity to values commensurate with the natural ecological setting and climate projections.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Applicant's Draft Decommissioning Plan is described in Section 2.3.6. Revegetation requirements are specified in Section 2.3.7.2 (Vegetation Management), 2.3.7.9 (Stormwater Management), Applicant-Proposed Measure BIO-4 (Vegetation Resources Management Plan), Mitigation Measure VEG-8.17 (Revegetation of Temporarily Disturbed Areas), and Mitigation Measure VIS-4 (Decommissioning and Site Restoration Plan).		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
LUPA-BIO-9: Implement the following general LUPA CMA for water and wetland dependent resources: • Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following: • On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills. • Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill. • Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases. • Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following: • Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion. • Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed. • Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins. • Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized. • Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins. • Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness. • Project applicants for sites that may affect intermittent and perennial streams, springs, swales, ephemeral washes, wetland vegetation, other DRECP water land covers, or sites occupied by aquatic or riparian Focus and BLM Special Status Species due to groundwater or surface water extraction will conduct hydrologic studies during project planning to determine the potential effect of groundwater and surface water extraction on the hydrologic unit. These studies will include both watershed effects as well as effects on perched, alluvial, and regional aquifers. Projects that are likely to affect ground-water resources in a manner that would result in substantial loss of riparian or wetland communities or habitat for riparian or aquatic Focus and BLM Special Status Species are prohibited. • The use of evaporation ponds for water management will be avoided when the water could harm birds or other terrestrial wildlife due to constituents of concern present in the wastewater (e.g., selenium, hypersalinity, etc.). Evaporation ponds will be configured to minimize attractiveness to shorebirds (e.g., maintain water depths over two feet; maintain steep slopes along edge; enclose evaporation ponds in long-term structures; or obscure evaporation ponds from view using materials that blend in with the natural surroundings). • Ramps that allow the egress of wildlife from ponds or other water management infrastructure will be installed.	X			X		
				• Section 2.3.7.1 describes Hazardous Material and Waste Management procedures which are part of the Proposed Action, and Section 2.3.7.9 describes the Stormwater Management procedures. • Section 4.20.2 describes the Applicant's proposed Construction Stormwater Pollution Prevention Plan (SWPPP). • Applicant-Proposed Measure BIO-2 specifies the construction related plans to be followed. These include plans to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation-type streams (Waste Management Plan, Spill Prevention Control and Countermeasures Plan, and Hazardous Materials Plan), and plans to address drainage, erosion, and sedimentation control (SWPPP). • Applicant-Proposed Measure BIO-3 describes construction BMPs which address these topics. • Mitigation Measure WATER-1 provides further specification of the requirements for the Construction SWPPP. Mitigation Measures WATER-2 describes further requirements of the Comprehensive Drainage, Stormwater, and Sedimentation Control Plan.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-10: Consistent with BLM state and national policies and guidance, integrated weed management actions, will be carried out during all phases of activities, as appropriate, and at a minimum will include the following: • Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds. • Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site. • Properly maintain vehicle wash and inspection stations to minimize the introduction of invasive weeds or subsidy of invasive weeds. • Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species. • Reestablish native vegetation quickly on disturbed sites. • Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas. • Use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Applicant-Proposed Measure APM-BIO-5 discusses the Applicant's Integrated Weed Management Plan, which has been reviewed and approved by the BLM Field Office.		
LUPA-BIO-11: Implement the following CMAs for controlling nuisance animals and invasive species: • No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where Focus and BLM Special Status Species are known or suspected to occur. • Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100-year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies. • Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination. • Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water. • When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Applicant-Proposed Measure APM-BIO-5 discusses the Applicant's Integrated Weed Management Plan, which has been reviewed and approved by the BLM Field Office.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
LUPA-BIO-12: For activities that may impact Focus or BLM Special Status Species, implement the following LUPA CMA for noise: • To the extent feasible, and determined necessary by BLM to protect Focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat. • Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels. • Use noise controls on standard construction equipment including mufflers to reduce noise.			X	X		
	The Project does not involve stationary noise sources. It does involve the use of construction equipment.			Section 4.12.2 specifies that construction equipment would employ factory-approved exhaust mufflers.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
			X			X
LUPA-BIO-13: Implement the following CMA for project siting and design • To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species (see "avoid to the maximum extent practicable" in Glossary of Terms). • The siting of projects along the edges (i.e. general linkage border) of the biological linkages identified in Appendix D (Figures D-1 and D-2) will be configured (1) to maximize the retention of microphyll woodlands and their constituent vegetation type and inclusion of other physical and biological features conducive to Focus and BLM Special Status Species' dispersal, and (2) informed by existing available information on modeled focus and BLM Special Status Species habitat and element occurrence data, mapped delineations of vegetation types, and based on available empirical data, including radio telemetry, wildlife tracking sign, and road-kill information. Additionally, projects will be sited and designed to maintain the function of F Special Status Species connectivity and their associated habitats in the following linkage and connectivity areas: ◦ Within a 5-mile-wide linkage across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy mountains (the majority of this linkage is within the Chuckwalla ACEC and Mule-McCoy Linkage ACEC). ◦ Within a 3-mile-wide linkage across Interstate 10 to connect the Chuckwalla and Palen mountains. ◦ Within a 1.5-mile-wide linkage across Interstate 10 to connect the Chuckwalla Mountains to the Chuckwalla Valley east of Desert Center. ◦ The confluence of Milpitas Wash and Colorado River floodplain within 2 miles of California State Route 78 (this linkage is entirely within the Chuckwalla ACEC). • Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, project vehicles, and equipment to the delineated project areas to protect vegetation types and focus and BLM Special Status Species. • Long-term nighttime lighting on project features will be limited to the minimum necessary for project security, safety, and compliance with Federal Aviation Administration requirements and will avoid the use of constant-burn lighting. • All long-term nighttime lighting will be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for Focus and BLM Special Status Species. Long- term nighttime lighting will be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to project infrastructure. • To the maximum extent practicable (see Glossary of Terms), restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas. • To the maximum extent practicable (see Glossary of Terms), confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance. • To the maximum extent practicable(see Glossary of Terms) , construction of new roads and/or routes will be avoided within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas will have a goal of "no net gain" of project roads and/or routes • To the maximum extent practicable (see Glossary of Terms), any new road and/or route considered within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species will not be paved so as not to negatively affect the function of identified linkages. • Use nontoxic road sealants and soil stabilizing agents.	• The Blue paloverde-Desert Ironwood Alliance (within the Madrean Warm Semi-Desert Wash Woodland/Scrub and Sonoran-Coloradan Semi-Desert Wash Woodland/Scrub specified in Table 17) is present outside in the area, but is avoided by the footprint of all alternatives. • The Project is situated so that it may impact Special Status Species (Harwood's eriastrum and Burrowing owl). No Plant Focus species, as defined in Table 23, are present in the Project area. • The Project is not located within or on the edges of any of the linkages shown in Maps D-1 or D-2. • The Project will require measures to protect vegetation types. • The Project will include nighttime lighting. • The Project will include roads.			• No Alternatives would directly impact the Blue paloverde-Desert Ironwood Alliance. However, the Proposed Action would be situated within the 200 foot setback distance of an area of Blue paloverde-Desert Ironwood Alliance that is located outside of the Project footprint. Alternatives 2 and 3 would be located more than 200 feet away from the Blue paloverde-Desert Ironwood Alliance. • Table 4.3-2 shows that all alternatives would directly impact Harwood's eriastrum. Because Alternatives 2 and 3 would still achieve the basic objectives of the activity, the Proposed Action does not avoid these resources to the maximum extent practicable, and does not conform. Alternatives 2 and 3 do conform. • All of the action alternatives would impact Burrowing owl habitat. However, because this is widespread across the site, it cannot be avoided by any reduced acreage configurations of the Project while still achieving the basic objectives of the activity. • Section 2.3.7.5 specifies flagging or staking or protected areas. Mitigation Measure VEG-8 specifies flagging and temporary fencing of work areas. • Nighttime lighting restrictions are discussed in Section 2.3.4.7 (Construction Schedule), Section 4.4.3.1 (impacts to wildlife habitat during construction), and the Applicant-Proposed Measures provided in Section 4.19.2. • Section 2.3.3.2 describes the location of the proposed gen-tie line within an existing utility corridor, and Section 2.3.3.3 describes the access roads that would be used. Mitigation Measure VEG-8.3 specifies that vehicles will be restricted to existing routes. Mitigation Measure VEG-8.6 specifies that soil stabilizers be non-toxic.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-14: Implement the following general standard practices to protect Focus and BLM Special Status Species: • Feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on a site is prohibited. • Any wildlife encountered during the course of an activity, including construction, operation, and decommissioning will be allowed to leave the area unharmed. • Domestic pets are prohibited on sites. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs) under Title II and Title III of the American with Disabilities Act. • All construction materials will be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections will be allowed to leave the construction area unharmed. • All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork. • Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.	Yes	No	Partial	Yes	No	Partial
	X			X		
				• Applicant-Proposed Measure APM-BIO-3 discusses the Construction BMPs, which include measures for managing trash and debris. Additional information is provided in Mitigation Measures VEG-8. • Mitigation Measures which specify means to allow wildlife to be moved out of harm's way include VEG-6, VEG-8.10, and WIL-1. • Mitigation Measures which prohibit bringing pets onsite include VEG-8.14, and WIL-8. • Mitigation Measure VEG-8.9 requires checking under vehicles for wildlife. Mitigation Measure 8.10(b) requires checking under construction materials. • Mitigation Measure 8.10 specifies procedures for avoiding wildlife pitfalls. • Section 2.3.4.3 discusses site preparation, and specifies that the preferred method is disk, rolling, and compacting vegetation, in order to leave vegetation in place to control erosion. Mitigation Measure VEG-9 also specifies crushing of vegetation, as opposed to blading, in order to maintain the seed bank.			
LUPA-BIO-15: Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Project design presented in the POD, and the mitigation measures described in the EIS/EIR, have been developed based on the most recent available guidance and templates. Conformance is also to be achieved through BLM review and approval of the Final POD and mitigation measures.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
LUPA-BIO-16: For activities that may impact Focus and BLM sensitive birds, protected by the ESA and/or Migratory Bird Treaty Act of 1918, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance, and data on birds and bats, including but not limited to activity specific plans and actions. The goal of the activity -specific bird and bat actions is to avoid and minimize direct mortality of birds and bats from the construction, operation, maintenance, and decommissioning of the specific activities. Activity-specific measures to avoid and minimize impacts may include, but are not limited to: • Siting and designing activities will avoid high bird and bat movement areas that separate birds and bats from their common nesting and roosting sites, feeding areas, or lakes and rivers. • For activities that impact bird and bat Focus and BLM Special Status Species, during project siting and design, conducting monitoring of bird and bat presence as well as bird and bat use of the project site using the most current survey methods and best procedures available at the time. • Reusing or co-locating new transmission facilities and other ancillary facilities with existing facilities and disturbed areas to reduce habitat destruction and avoid additional collision risks. • Reducing bird and bat collision hazards by utilizing techniques such as unguyed monopole towers or tubular towers. Where the use of guywires is unavoidable, demarcate guywires using the best available methods to minimize avian species strikes. • When fencing is necessary, use bird and bat compatible design standards. • Using lighting that does not attract birds and bats or their prey to project sites including using non-steady burning lights (red, dual red and white strobe, strobe- like flashing lights) to meet Federal Aviation Administration requirements, using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, and halogen). • Implementing a robust monitoring program to regularly check for wildlife carcasses, document the cause of mortality, and promptly remove the carcasses. • Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring.	X			X		
				• Protocols for presence and use surveys for birds are described in BRTR Section 2.8.3, and are summarized in EIS/EIR Section 3.4.1.1. Protocols for presence and use surveys for bats are described in BRTR Section 2.8.4.3, and are summarized in EIS/EIR Section 3.4.1.1. The surveys were conducted under the direction of BLM staff, and the resulting reports were approved by those staff. Therefore, the surveys used the most current survey methods available at the time. • Section 2.3.3.2 describes the location of the proposed gen-tie line within an existing utility corridor. • Nighttime lighting restrictions are discussed in Section 2.3.4.7 (Construction Schedule), Section 4.4.3.1 (impacts to wildlife habitat during construction), and the Applicant-Proposed Measures provided in Section 4.19.2.			

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
LUPA-BIO-17: For activities that may result in mortality to Focus and BLM Special–Status bird and bat species, a Bird and Bat Conservation Strategy (BBCS) will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality. The BBCS actions for impacts to birds and bats during these activities will be determined by the activity-specific bird and bat operational actions. The strategy shall be approved by BLM in coordination with USFWS, and CDFW as appropriate, and may include, but is not limited to: • Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring. • Activity-specific operational avoidance and minimization actions that reduce the level of mortality on the populations of bird and bat species, such as: • Use techniques that minimize attraction of birds to hazardous situations that are mistaken to be or simulate natural habitats (e.g., bodies of water). • Implement operational management techniques that minimize impacts to migratory birds during diurnal and seasonal cycles (e.g., positioning of heliostats to decrease surface area exposed to avian species). • Evaluation and installation of the best available bird and bat detection and deterrent technologies available at the time of construction. Known important Focus and BLM Special Status bird areas are: • Dry lakes and playas of the north Mojave region, which include China Lake, Koehn Lake, Harper Lake, and Searles Lake (as shown in the Audubon Important Bird Areas in Appendix D) • Antelope Valley (as shown in the Audubon Important Bird Areas in Appendix D) • Lower Colorado River Valley (as shown in the Audubon Important Bird Areas in Appendix D) • The Salton Sea and bordering areas including agricultural land of the Imperial Valley (as shown in the Audubon Important Bird Areas in Appendix D) • Documented avian movement corridors along the north slope of the San Gabriel and San Bernardino mountain ranges • Other regionally important seasonal use areas and migratory corridors identified in future studies or otherwise documented in the scientific literature over the term of the LUPA	X			X		
	The Project is not located in an Audubon Important Bird Area, as shown in DRECP Figure D-3. However, the requirement still applies because it is an activity that may result in mortality to Focus and BLM Special–Status bird and bat species.			The BBCS will be finalized and approved by BLM and the USFWS prior to Project construction.		
LUPA-BIO-RIPWET-1: The riparian and wetland DRECP vegetation types and other features listed in Table 17 will be avoided to the maximum extent practicable, except for allowable minor incursions (see Glossary of Terms for "avoidance to the maximum extent practicable" and "minor incursion") with the specified setbacks. (see Table 17 in DRECP). For minor incursion (see "minor incursion" in the Glossary of Terms) to the DRECP riparian vegetation types, wetland vegetation types, or encroachments on the setbacks listed in Table 17, the hydrologic function of the avoided riparian or wetland communities will be maintained. • Minor incursions in the riparian and wetland vegetation types or other features including the setbacks listed in Table 17 will occur outside of the avian nesting season, February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW if the minor incursion(s) is likely to result in impacts to nesting birds.	Yes	No	Partial	Yes	No	Partial
		X				
	No Alternatives would directly impact the Blue paloverde-Desert Ironwood Alliance.					
LUPA-BIO-RIPWET-2: Hydrologic function of the following DRECP vegetation types will be maintained: North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat, Southwestern North American Salt Basin and High Marsh, and other undifferentiated wetland-related land covers (i.e., "Playa," "Wetland," and "Open Water").	Yes	No	Partial	Yes	No	Partial
		X				
	None of the referenced vegetation types are present at the project site.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-RIPWET-3: For activities that occur within 0.25 mile of a riparian or wetland DRECP vegetation type and may impact BLM Special Status riparian and wetland birds species, conduct a pre-construction/activity nesting bird survey for BLM Special Status riparian and wetland birds according to agency-approved protocols. Based on the results of the nesting bird survey above, setback activities that are likely to impact BLM Special Status riparian and wetland bird species, including but not limited to pre-construction, construction and decommissioning, 0.25 mile from active nests Special Status during the breeding season (February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW). For activities in areas covered by this provision that occur during the breeding season and that last longer than one week, nesting bird surveys may need to be repeated, as determined by BLM, in coordination with USFWS and CDFW, as appropriate. No pre-activity nesting bird surveys are necessary for activities occurring outside of the breeding season.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure WIL-7 proposes pre-construction surveys with dates of February 1 through August 31. It states that a setback of an appropriate size will be established.		
LUPA-BIO-RIPWET-4: Setback pre-construction, construction, and decommissioning activities and other activities that may impact federally listed fish species, 0.25 mile from the edge of existing or newly discovered occurrences of federally listed fish species, except for minor incursions (see Glossary of Terms). • Demonstrate neutral or beneficial long-term hydrologic effects on federally listed fish species and the adjoining riparian and wetland habitat prior to seeking authorization for and commencing a minor incursion.	Yes	No	Partial	Yes	No	Partial
		X				
	There are no fish species present at the project site.					
LUPA-BIO-RIPWET-5: Site and design activities to fully avoid operational impacts to existing and newly discovered occurrences of federally listed fish species.	Yes	No	Partial	Yes	No	Partial
		X				
	There are no fish species present at the project site.					
LUPA-BIO-RIPWET-6: Avoid pre-construction, construction, and decommissioning activities or other activities that may impact the Tehachapi slender salamander within 0.25 mile of existing or newly discovered occurrences of or suitable habitat for Tehachapi slender salamander, except for minor incursions (see Glossary of Terms).	Yes	No	Partial	Yes	No	Partial
		X				
	The project is not located near habitat of the Tehachapi slender salamander.					
LUPA-BIO-RIPWET-7: Construct culverts or other suitable below-grade crossings for new or improved roadways that bisect suitable habitat for the Tehachapi Slender Salamander. • Construct barriers to reduce at-grade crossings along new or improved roadways that bisect suitable habitat.	Yes	No	Partial	Yes	No	Partial
		X				
	The project is not located near habitat of the Tehachapi slender salamander.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
LUPA-BIO-DUNE-1: Because DRECP sand dune vegetation types and Aeolian sand transport corridors are, by definition, shifting resources, activities that potentially occur within or bordering the sand dune DRECP vegetation types and/or Aeolian sand transport corridors must conduct studies to verify the location [refer to Appendix D, Figure D-7] and extent of the sand resource(s) for the activity-specific environmental analysis to determine: • Whether the proposed activity(s) occur within a sand dune or an Aeolian sand transport corridor • If the activity(s) is subject to dune/Aeolian sand transport corridor CMAs • If the activity(s) needs to be reconfigured to satisfy applicable avoidance requirements	X			X		
	Note – the reference to DRECP Figure D-7 in the CMA appears to be a typographical error. The CMA is actually referring the reader to use DRECP Figure D-15. The Project site is within the Dune/Sand area shown on DRECP Figure D-15.			Figure 3.3-2 shows the location of the project with respect to the Dune/Sand area shown in DRECP Figure D-15. The Applicant has mapped the location and extent of the resource, and has determined that the Project does occur within the corridor. There are no specific avoidance requirements for the sand transport corridor, but DFA-VPL-BIO-DUNE-1 requires that projects avoid dune vegetation (i.e., North American Warm Desert Dune and Sand Flats). North American Warm Desert Dune and Sand Flats in the Project area is mapped on DRECP Figure D-7. The resolution of that map is not detailed enough to ensure that the Project entirely avoids the North American Warm Desert Dune and Sand Flats area, but it appears that it does avoid it. Conformance with the other specific CMAs and avoidance requirements is addressed where applicable in other CMAs.		
LUPA-BIO-DUNE-2: Activities that potentially affect the amount of sand entering or transported within Aeolian sand transport corridors will be designed and operated to: • Maintain the quality and function of Aeolian transport corridors and sand deposition zones, unless related to maintenance of existing [at the time of the DRECP LUPA ROD] facilities/operations/activities • Avoid a reduction in sand-bearing sediments within the Aeolian system • Minimize mortality to DUNE associated Focus and BLM Special Status Species	Yes	No	Partial	Yes	No	Partial
	X					X
	DRECP only maps one sand-related feature, which is the "Dunes/Sand" area mapped on DRECP Figure D-15. In contrast, the BRTR and EIS/EIR map two separate features. Figure 3.3-2 shows the location of the project with respect to the "Sand Corridor", which corresponds to the Dune/Sand area shown in DRECP Figure D-15, and covers virtually the entire project area.			As discussed in Section 3.3.1.1, the Dunes/Sand area mapped on DRECP Figure D-15 is not actually a continuous, inter-connected series of sand transport areas, nor is it currently functioning to transport sand on a regional basis. Also, the Project is situated at the downwind end of the system, and evaluation of existing literature and local wind patterns indicates that any effects the Project has in an upwind direction would be very localized. Therefore, the Project would not affect the quality or function of the corridor, and would not reduce sand-bearing sediments within the system. With respect to minimizing mortality to dune-associated species, the Harwood's eriastrum and the Mojave fringe-toed lizard, are specifically associated with dunes. All alternatives would include direct impacts to these species. However, most of these impacts under Alternatives 2 and 3 are associated with the gen-tie line, which is required under the CDCA Plan to be placed within the utility corridor. The utility corridor is coincident with the lizard and eriastrum habitat, so these impacts are unavoidable.		
LUPA-BIO-DUNE-3: Any facilities or activities that alter site hydrology (e.g., sediment barrier) will be designed to maintain continued sediment transport and deposition in the Aeolian corridor in a way that maintains the Aeolian sorting and transport to downwind deposition zones. Site designs for maintaining this	Yes	No	Partial	Yes	No	Partial
	X			X		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
transport function must be approved by BLM in coordination with USFWS and CDFW as appropriate.				All alternatives avoid direct impacts to sand dunes to the extent possible. The gen-tie line would be situated within an area of dunes, but is required under the CDCA Plan to be placed within the utility corridor, which is coincident with the dunes. The facility itself is a porous barrier. Localized sand deposition will occur at fencelines and at support posts, but long-term sand transport rates through the facility would not be changed. In addition, there are no deposition zones downwind of the facility to be impacted.		
LUPA-BIO-DUNE-4: Dune formations and other sand accumulations (i.e., sand ramps, sand sheets) with suitable habitat characteristics for the Mojave fringe-toed lizard (i.e., unconsolidated blow-sand) will be mapped according to mapping standards established by the BLM National Operations Center. For minor incursions (see "minor incursion" in the Glossary of Terms) into sand dunes and sand transport areas the activity will be sited in the mapped zone with the least impacts to sand dunes and sand transport and Mojave fringe-toed lizards.	Yes	No	Partial	Yes	No	Partial
	X					X
				The "Sand Corridor" (which corresponds to the Dune/Sand area shown in DRECP Figure D-15) was mapped in association with DRECP, and onsite vegetation was mapped by BLM biologists assigned to the Project. The map showing both features is Figure 3.3-2. Table 4.3-1 shows the relative disturbance of this habitat by Alternatives 1, 2, and 3, and Table 4.4-3 shows that the disturbance associated with impacts to Mojave fringe-toed lizards. With respect to both the habitat and the occurrences of Mojave fringe-toed lizards, Alternatives 2 and 3 avoid impacts to the extent feasible, while the Proposed Action does not avoid to the extent feasible, and therefore does not conform.		
LUPA-BIO-DUNE-5: If suitable habitat characteristics are identified during the habitat assessment, clearance surveys (see Glossary of Terms) for Mojave fringe-toed lizard will be performed in suitable habitat areas.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 2.3.4.1 specifies that clearance surveys for Mojave fringe-toed lizard will be performed.		
LUPA-BIO-BAT-1: Activities, except wind projects, will not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost as described below. Refer to CMA DFA-VPL-BIO-BAT-1 for distances within DFAs and VPLs.	Yes	No	Partial	Yes	No	Partial
		X				
	As discussed in Section 2.8.4.3 of the Biological Resources Technical Report (BRTR), the closest bat colony is 3.4 miles away from the Project site.					
LUPA-BIO-BAT-2: Mines will be assumed to be occupied bat roosts, unless appropriate surveys for bat use have been conducted during all seasons (including maternity, lekking or swarming, and winter use). Mines not considered potential bat roosts are only those that have no structure/workings (adits or shafts or crevices out of view).	Yes	No	Partial	Yes	No	Partial
		X				
	As discussed in Section 2.8.4.3 of the BRTR, the closest bat colony is 3.4 miles away from the Project site.					
LUPA-BIO-PLANT-1: Conduct properly timed protocol surveys in accordance with the BLM's most current (at time of activity) survey protocols for plant Focus and BLM Special Status Species.	Yes	No	Partial	Yes	No	Partial
	X			X		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
				The vegetation surveys are described in Section 2.7 of the BRTR, and in Sections 3.3.1.1 and 3.3.1.2 of the EIS/EIR. The surveys were performed under the direction of BLM biologists assigned to the Project, who approved the BRTR. Therefore, the mapping was done according to the most current BLM survey protocols at the time of the surveys.		
LUPA-BIO-PLANT-2: Implement an avoidance setback of 0.25 mile for all Focus and BLM Special Status Species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant Species (see Appendix Q, Baseline Biology Report, in the Proposed LUPA and Final EIS [2015], or the most recent data and modeling).	Yes	No	Partial	Yes	No	Partial
	X					X
				Table 4.3-3 shows that the solar plant site for the Proposed Action would directly impact the Harwood's eriastrum, while the solar plant site for Alternatives 2 and 3 would avoid all occurrences of Harwood's eriastrum. However, the solar site for Alternative 2 does not meet the setback distance of 0.25 miles for BLM Sensitive plant species. The solar array footprint for Alternative 3 does meet the setback distance. The gen-tie corridor for all action alternatives also directly impacts the Harwood's eriastrum, but this impact is unavoidable because the gen-tie line is required to be placed within the approved utility corridor.		
LUPA-BIO-PLANT-3: Impacts to suitable habitat for Focus and BLM Special Status plant species should be avoided to the extent feasible, and are limited [capped] to a maximum of 1% of their suitable habitat throughout the entire LUPA Decision Area. The baseline condition for measuring suitable habitat is the DRECP modeled suitable habitat for these species utilized in the EIS analysis (2014 and 2015), or the most recent suitable habitat modeling. For those plants with Species Specific DFA Suitable Habitat Impact Caps listed in Table 23, those caps apply in the DFAs only. Refer to CMA **DFA-PLANT-1**.	Yes	No	Partial	Yes	No	Partial
			X			X
	One BLM Special Status plant species, the Harwood's eriastrum, is present in the Project area. No Plant Focus species, as defined in Table 23, are present in the Project area.			Table 4.3-3 shows that the solar plant site for the Proposed Action would directly impact the Harwood's eriastrum, while the solar plant site for Alternatives 2 and 3 would avoid all occurrences of Harwood's eriastrum. Because Alternatives 2 and 3 meet the purpose and need, the Proposed Action does not avoid this species to the extent feasible. Therefore, the Proposed Action does not conform, but Alternatives 2 and 3 do conform.		
LUPA-BIO-SVF-1: For activity-specific NEPA analysis, a map delineating potential sites and habitat assessment of the following special vegetation features is required: Yucca clones, creosote rings, Saguaro cactus, Joshua tree woodland, microphyll woodland, Crucifixion thorn stands. BLM guidelines for mapping/surveying cactus, yuccas, and succulents shall be followed.	Yes	No	Partial	Yes	No	Partial
			X	X		
	The following resources are not present at the project site, and are not applicable: Yucca clones, creosote rings, Saguaro cactus, and Joshua tree woodland. The following resource is present near the Project site: Microphyll woodland (desert dry wash woodland)[4]. The following resource was not identified in site surveys, but was determined to have a moderate potential to occur, and may be applicable: Crucifixion thorn stands.			All alternatives would avoid the mapped area of microphyll woodland. No map of Crucifixion thorn is provided, since no individuals were identified in site surveys. The BRTR recommends that focused surveys specific to the Emory's crucifixion thorn be conducted.		
LUPA-BIO-SVF-2: Yucca clones larger than 3 meters in diameter (longest diameter if the clone forms an ellipse rather than a circular ring) shall be avoided.	Yes	No	Partial	Yes	No	Partial
		X				
	Yucca clones are not present in the Project area.					
LUPA-BIO-SVF-3: Creosote bush rings (see Glossary of Terms) larger than 5 meters in diameter (longest	Yes	No	Partial	Yes	No	Partial

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
diameter if the "ring" forms an ellipse rather than a circle) shall be avoided.		X				
	Creosote rings are not present in the Project area.					
LUPA-BIO-SVF-4: Saguaro cactus should be managed in such a way as to provide long-term habitat for the California populations not just individual plants, except in DFAs.	Yes	No	Partial	Yes	No	Partial
		X				
	Saguaro cactus are not present in the Project area.					
LUPA-BIO-SVF-5: Joshua tree woodland (Yucca brevifolia Woodland Alliance): impacts to Joshua tree woodlands (see Glossary of Terms) will be avoided to the maximum extent practicable (see Glossary of Terms), except for minor incursions (see Glossary of Terms).	Yes	No	Partial	Yes	No	Partial
		X				
	Joshua tree woodland is not present in the Project area.					
LUPA-BIO-SVF-6: Microphyll woodland: impacts to microphyll woodland (see Glossary of Terms) will be avoided, except for minor incursions (see Glossary of Terms).	Yes	No	Partial	Yes	No	Partial
	X			X		
				All alternatives would avoid the microphyll woodland.		
LUPA-BIO-SVF-7: Crucifixion thorn stands: (Castela emoryi Shrubland Special Stands) Crucifixion thorn stands with greater than 100 individuals will be avoided.	Yes	No	Partial	Yes	No	Partial
		X				
	No crucifixion thorn stands were identified in plant surveys.					
LUPA-BIO-VEG-1: Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Applicant-Proposed Measure APM-BIO-4 specifies procedures for managing cacti.		
LUPA-BIO-VEG-2: Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 2.3.4.3 discusses site preparation, and specifies that the preferred method is disk, rolling, and compacting vegetation, in order to leave vegetation in place to control erosion. Mitigation Measures VEG-9 also specifies crushing of vegetation, as opposed to blading, in order to maintain the seed bank.		
LUPA-BIO-VEG-3: Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project does not include the collection of plant material.					
LUPA-BIO-VEG-4: Within the Bishop Field Office area, provide yearlong protection of endangered, threatened, candidate, and sensitive plant and animal habitats. Yearlong protection means that no discretionary actions which would adversely affect target resources will be allowed.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project is not within the Bishop Field Office area.					
LUPA-BIO-VEG-5: All activities will follow applicable BLM state and national regulations and policies for	Yes	No	Partial	Yes	No	Partial

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.	X			X		
				Applicant-Proposed Measure APM-BIO-4 specifies procedures for managing cacti.		
LUPA-BIO-VEG-6: BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.	Yes	No	Partial	Yes	No	Partial
		X				
	Although BLM may consider sale of succulents associated with the Project, this is an internal BLM actions, not a condition for approval for a ROW authorization.					
LUPA-BIO-IFS-1: Activities within desert tortoise linkages, identified in Appendix D, that may have a negative impact on the linkage will require an evaluation, in the environmental document(s), of the effects on the maintenance of long- term viable desert tortoise populations within the affected linkage. The analysis will consider the amount of suitable habitat, including climate refugia, required to ensure long-term viability within each linkage given the linkage's population density, long-term demographic and genetic needs, degree of existing habitat disturbance/impacts, mortality sources, and most up-to-date population viability modeling. Activities that would compromise the long-term viability of a linkage population or the function of the linkage, as determined by the BLM in coordination with USFWS and CDFW, are prohibited and will require reconfiguration or re-siting.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project is not within a desert tortoise linkage, as identified in DRECP Figure D-16.					
LUPA-BIO-IFS-2: Construction of new roads and/or routes will be avoided to the maximum extent practicable (see Glossary of Terms) within desert tortoise habitat in tortoise conservation areas (TCAs) or tortoise linkages identified in Appendix D, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern for desert tortoise. TCAs and identified linkages should have the goal of "no net gain" of road density. Any new road considered within a TCA or identified linkage will not be paved and will be designed and sited to minimize the effect to the function of identified linkages or local desert tortoise populations and shall have a maximum speed limit of 25 miles per hour. Roads requiring the installation of long-term desert tortoise exclusion fencing for construction or operation will incorporate wildlife underpasses (e.g., culverts) to reduce population fragmentation.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project is not within a desert tortoise conservation area (TCA) or linkage, as identified in DRECP Figure D-16.					
LUPA-BIO-IFS-3: All culverts for access roads or other barriers will be designed to allow unrestricted access by desert tortoises and will be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.	Yes	No	Partial	Yes	No	Partial
		X				
	Neither the POD nor the EIS/EIR identify that culverts will be installed.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
LUPA-BIO-IFS-4: In areas where protocol and clearance surveys are required (see Appendix D), prior to construction or commencement of any long-term activity that is likely to adversely affect desert tortoises, desert tortoise exclusion fencing shall be installed around the perimeter of the activity footprint (see Glossary of Terms) in accordance with the Desert Tortoise Field Manual (USFWS 2009) or most up-to- date USFWS protocol. Additionally, short-term desert tortoise exclusion fencing will be installed around short-term construction and/or activity areas (e.g., staging areas, storage yards, excavations, and linear facilities), as appropriate, per the Desert Tortoise Field Manual (USFWS 2009) or most up-to-date USFWS protocol. • Exemption from desert tortoise protocol survey requirements can be obtained from BLM, in coordination with USFWS, and CDFW as applicable, on a case-by-case basis if a designated biologist determines the activity site does not contain the elements of desert tortoise habitat, is unviable for occupancy, or if baseline studies inferred absence during the current or previous active season. • Construction of desert tortoise exclusion fences will occur during the time of year when tortoise are less active in order to minimize impacts and to accommodate subsequent desert tortoise surveys. Any exemption or modification of desert tortoise exclusion fencing requirements will be based on the specifics of the activity and the site-specific population and habitat parameters. Sites with low population density and disturbed, fragmented, or poor habitat are likely to be candidates for fencing requirement exemptions or modifications. Substitute measures, such as on-site biological monitors in the place of the fencing requirement, may be required, as appropriate. • After an area is fenced, and until desert tortoises are removed, the designated biologist is responsible for ensuring that desert tortoises are not being exposed to extreme temperatures or predators as a result of their pacing the fence. Remedies may include the use of shelter sites placed along the fence, immediate translocation, removal to a secure holding area, or other means determined by the BLM, USFWS, and CDFW, as applicable. • Modification or elimination of the above requirement may also be approved if the activity design will allow retention of desert tortoise habitat within the footprint. If such a modification is approved, modified protective measures may be required to minimize impacts to desert tortoises that may reside within the activity area. • Immediately prior to desert tortoise exclusion fence construction, a designated biologist (see Glossary of Terms) will conduct a clearance survey of the fence alignment to clear desert tortoises from the proposed fence line's path. • All desert tortoise exclusion fencing will incorporate desert tortoise proof gates or other approved barriers to prevent access of desert tortoises to work sites through access road entry points. • Following installation, long-term desert tortoise exclusion fencing will be inspected for damage quarterly and within 48 hours of a surface flow of water due to a rain event that may damage the fencing. • All damage to long-term or short-term desert tortoise exclusion fencing will be immediately blocked to prevent desert tortoise access and repaired within 72 hours.	X			X		Mitigation Measure WIL-1 specifies requirements for desert tortoise fencing. That measure has been compiled from previous EISs (McCoy, Modified Blythe), and is based on the USFWS 2009 requirements.

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-IFS-5: Following the clearance surveys (see Glossary of Terms) within sites that are fenced with long-term desert tortoise exclusion fencing a designated biologist (see Glossary of Terms) will monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance survey are moved from harm's way. A designated biologist will inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys will not require inspection.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measures VEG-1 through VEG-5 specify the qualifications, duties, and authorities of the Designated Biologist(s) and Monitor(s). Specific requirements for inspecting pipes and culverts are provided in Mitigation Measure VEG-8.10.		
LUPA-BIO-IFS-6: When working in areas where protocol or clearance surveys are required (see Appendix D), biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measures VEG-1 through VEG-5 specify the qualifications, duties, and authorities of the Designated Biologist(s) and Monitor(s). Mitigation Measure VEG-8.16 specifies monitoring during geotechnical evaluations.		
LUPA-BIO-IFS-7: A designated biologist (see Glossary of Terms) will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measures VEG-1 through VEG-5 specify the qualifications, duties, and authorities of the Designated Biologist(s) and Monitor(s). Mitigation Measure VEG-8.16 specifies monitoring during geotechnical evaluations.		
LUPA-BIO-IFS-8: Inspect the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure VEG-8.9 specifies the requirements for inspecting under vehicles.		
LUPA-BIO-IFS-9: Vehicular traffic will not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Applicant-Proposed Measure specifies a speed limit of 15 mph in all unimproved areas.		
LUPA-BIO-IFS-10: Comply with the conservation goals and objectives, criteria, and management planning actions identified in the most recent revision of the Flat-tailed Horned Lizard Rangewide Management Strategy (RMS). Activities will include appropriate design features using the most current information from the RMS and RMS Interagency Coordinating Committee to minimize adverse impacts during siting, design, pre- construction, construction, operation, and decommissioning; ensure that current or potential linkages and habitat quality are maintained; reduce mortality; minimize other adverse impacts during operation; and ensure that activities have a neutral or positive effect on the species.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not within the range of the Flat-tailed horned lizard.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-IFS-11: If Bendire's thrasher is present, conduct appropriate activity-specific biological monitoring (see Glossary of Terms) to ensure that Bendire's thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).	Yes	No	Partial	Yes	No	Partial
	X			X		
				Table 3.4-1 lists the species as Low Potential, with nesting habitat present. Mitigation Measure WIL-7 specifies requirements for pre-construction nest surveys. This measure specifies that, if active or suspected active nests are identified, a monitoring plan shall be developed, and a qualified biologist shall perform monitoring.		
LUPA-BIO-IFS-12: If burrowing owls are present, a designated biologist (see Glossary of Terms) will conduct appropriate activity-specific biological monitoring (see Glossary of Terms) to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure WIL-9 specifies requirements for burrowing owl surveys, avoidance, and monitoring, including the setback of 656 feet.		
LUPA-BIO-IFS-13: If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist (see Glossary of Terms) through the use of one-way doors will occur according to the specifications in Appendix D or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty as specified in Appendix D or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure WIL-9 specifies requirements for burrowing owl surveys, avoidance, and monitoring, including passive burrow exclusion.		
LUPA-BIO-IFS-14: Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure WIL-9 specifies that active translocation may be done, in coordination with CDFW.		
LUPA-BIO-IFS-15: All activities will be designed and sited in a manner to avoid or minimize the likelihood of contact, injury, and mortality of California condors. If a condor is identified at a site, the BLM biological staff and USFWS will be immediately notified for guidance.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not within the range of the condor.					
LUPA-BIO-IFS-16: Flight activity (e.g., surveys, construction, as well as operation and maintenance activities) related to any activities will not be allowed in the airspace extending to 3,000 feet above condor nest sites.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not within the range of the condor.					
LUPA-BIO-IFS-17: In the range of the California condor, structures supported by guy wires will be marked with recommended bird deterrent devices at the appropriate spacing intervals.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not within the range of the condor.					
LUPA-BIO-IFS-18: In the range of the California condor, all equipment and work-related materials that are potentially hazardous to condors, including but not limited to items that can be ingested, picked up, or carried away (e.g., loose-wires, open containers with fluids, some construction materials, etc.) will be kept in closed containers either in the work area or placed inside vehicles when they are not being used and at the end of every work day.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not within the range of the condor.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-IFS-19: In the range of the California condor, when feasible, ethylene glycol-based anti-freeze or other ethylene glycol-based liquid substances will be avoided, and propylene glycol-based antifreeze will be used. Vehicles and equipment using ethylene glycol based substances will be inspected before and after field use as well as during storage on sites for leaks and puddles. Standing fluid will be remediated without unnecessary delay.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not within the range of the condor.					
LUPA-BIO-IFS-20: Activities that are determined to have a potential risk of taking condors will implement the best detect, deter, and curtailment strategy available at the time of the activity to minimize adverse effects, and avoid or minimize the likelihood of condor injury and mortality. (An example of a 2015 curtailment strategy is shutting down wind generation operations when condor(s) are present, or wind generation facilities switching to night operations only). The strategy must be approved by the BLM and USFWS, in coordination with CDFW as appropriate.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not within the range of the condor.					
LUPA-BIO-IFS-21: If condors begin to regularly visit a site, BLM may require, in coordination with USFWS, and CDFW as appropriate, the implementation of additional measures to minimize potential impacts to condors. These measures will be based on best available data, activity and areas specifics, and may include, but are not limited to: • Barriers, including welded wire fabric or hardware cloth, will be installed to prevent access around any facility element that poses a danger to condors. • Stainless steel lines, rather than poly chemical lines will be used to preclude condors from obtaining and ingesting pieces of poly chemical lines. • Landing deterrents attached to the walking perching substrates, such as porcupine wire or Daddi Long Legs ®.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not within the range of the condor.					
LUPA-BIO-IFS-22: Operations and/or activities that reach an activity-specified trigger for condor injury and/or mortality as determined by BLM and USFWS, and CDFW as appropriate, will curtail operations and/or activities using best available techniques, as determined by BLM and USFWS, and CDFW as appropriate. (An example of a 2015 curtailment strategy is shutting down wind generation operations when condor(s) are present, or wind generation facilities switching to night operations only.) If curtailment techniques are not viable or available, then operations and/or activities will be suspended until the injury and/or condor mortality issue is resolved to the satisfaction of BLM and USFWS, and CDFW, as appropriate.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not within the range of the condor.					
LUPA-BIO-IFS-23: In the range of the California condor, if an activity may have an impact on California condors, a Condor Operations Strategy (COS) will be developed and implemented on a activity-specific basis in order to avoid and/or reduce the likelihood of injury and mortality from activities. The COS shall be approved by BLM in coordination with USFWS, and CDFW as appropriate for third party activities, and may include, but is not limited, to detailing specifics on: the activity-specific detect, deter and curtailment strategy; monitoring approach to detect condor use of the site; adaptive management approach if condors are found to visit the site; and, activity-specific measures that assist in the recovery of condor.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not within the range of the condor.					
LUPA-BIO-IFS-24: Provide protection from loss and harassment of active golden eagle nests through the following actions: Activities that may impact nesting golden eagles, will not be sited or constructed within 1-mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate.	Yes	No	Partial	Yes	No	Partial
		X				
	Although DRECP identifies one nesting site in the McCoy Mountains within the 10-mile radius, no active golden eagle nests were detected within the 10 mile radius surrounding the Study Area during surveys. Although the site is considered foraging habitat, it would not be sited within 1 mile of any active or alternative golden eagle nest.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-IFS-25: Cumulative loss of golden eagle foraging habitat within a 1 to 4 mile radius around active or alternative golden eagle nests (as identified or defined in the most recent USFWS guidance and/or policy) will be limited to less than 20%. See **CONS-BIO-IFS-5** for the requirement in Conservation Lands.	Yes	No	Partial	Yes	No	Partial
		X				
	Although DRECP identifies one nesting site in the McCoy Mountains within the 10-mile radius, no active golden eagle nests were detected within the 10 mile radius surrounding the Study Area during surveys. Although the site is considered foraging habitat, it would not contribute to loss of foraging habitat within 1 to 4 mile radius around any nest.						
LUPA-BIO-IFS-26: For activities that impact golden eagles, applicants will conduct a risk assessment per the applicable USFWS guidance (e.g. the Eagle Conservation Plan Guidance) using best available information as well as the data collected in the pre-project golden eagle surveys.	Yes	No	Partial	Yes	No	Partial
	X			X		
	The project will impact foraging habitat for golden eagles.			BLM, USFWS, and Applicant will address risks to golden eagles through the BBCS.		
LUPA-BIO-IFS-27: If a permit for golden eagle take is determined to be necessary, an application will be submitted to the USFWS in order to pursue a take permit.	Yes	No	Partial	Yes	No	Partial
		X				
	Outside of land use plans, the BLM does not require applicants to apply for an eagle take permit.					
LUPA-BIO-IFS-28: In order to evaluate the potential risk to golden eagles, the following activities are required to conduct 2 years of pre-project golden eagle surveys in accordance with USFWS Eagle Conservation Plan Guidance as follows: • Wind projects and solar projects involving a power tower • Other activities for which the BLM, in coordination with USFWS, and CDFW as appropriate, determines take of golden eagle is reasonably foreseeable or there is a potential for take of golden eagle	Yes	No	Partial	Yes	No	Partial
	X			X		
				As reported in Section 2.8.3.4 of the Biological Resources Technical Report and EIS/EIR Section 3.4.1.1, two years of golden eagle surveys were done.		
LUPA-BIO-IFS-29: For active nests with recreational conflicts that risk the occurrence of take, provide public notification (e.g., signs) of the sensitive area and implement seasonal closures as appropriate.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (management of recreation) which is not related to authorization of the Project.					
LUPA-BIO-IFS-30: For activities where ongoing take of golden eagles is anticipated, develop advanced conservation practices per USFWS Eagle Conservation Plan Guidance.	Yes	No	Partial	Yes	No	Partial
	X			X		
	The project will impact foraging habitat for golden eagles.			BLM, USFWS, and Applicant will address risks to golden eagles through the BBCS.		
LUPA-BIO-IFS-31: As determined necessary by BLM in coordination with USFWS, and CDFW as appropriate, for activities/projects that are likely to impact golden eagles implement site-specific golden eagle mortality monitoring in support of the pre-construction, pre-activity risk assessment surveys.	Yes	No	Partial	Yes	No	Partial
	X			X		
	The project will impact foraging habitat for golden eagles.			BLM, USFWS, and Applicant will address risks to golden eagles through the BBCS.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-IFS-32: Avoid use of rodenticides and insecticides within five miles of active Swainson's hawk nest.	Yes	No	Partial	Yes	No	Partial
		X				
	Applicant does not propose to use insecticides or rodenticides.					
LUPA-BIO-IFS-33: Access to, and use of, designated water sources for desert bighorn sheep will not be impeded by activities in designated and new utility corridors.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.4.3.1 discusses Project impacts to bighorn sheep. That section states that the project would not present a barrier to movement of bighorn sheep.		
LUPA-BIO-IFS-34: Transmission projects and new utility corridors will minimize effects on access to, and use of, designated water sources for desert bighorn sheep.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.4.3.1 discusses Project impacts to bighorn sheep. That section states that the project would not present a barrier to movement of bighorn sheep.		
LUPA-BIO-IFS-35: Protocol surveys (see Glossary of Terms) are required for activities in Mohave ground squirrel key population centers and linkages as indicated in Appendix D. Results of protocol surveys will be provided to BLM and CDFW to consult on, as appropriate, for third party activities.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					
LUPA-BIO-IFS-36: Activities in Mohave ground squirrel key population centers, as identified in Appendix D, requiring an Environmental Impact Statement are required to assess the effect of the activity on the long term function of the affected key population center. • Activities within a key population center, as identified in Appendix D, must be designed to avoid adversely impacting the long-term function of the affected key population center.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					
LUPA-BIO-IFS-37: Activities in key population centers will be sited in previously disturbed areas, areas of low habitat quality and in areas with low habitat intactness, to the maximum extent practicable (see Glossary of Terms).	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					
LUPA-BIO-IFS-38: Disturbance of suitable habitat from activities, requiring an EA or EIS, within the Mohave ground squirrel key population centers and linkages (as identified in Appendix D) will not occur during the typical dormant season (August 1 through February 28) unless absence is inferred and supported by protocol surveys or other available data during the previous active season.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-IFS-39: During the typical active Mohave ground squirrel season (February 1 through August 31), conduct clearance surveys throughout the site, immediately prior to initial ground disturbance in the areas depicted in Appendix D. In the cleared areas, perform monitoring to determine if squirrels have entered cleared areas. Contain ground disturbance to within areas cleared of squirrels. • Detected occurrences of Mohave ground squirrel will be flagged and avoided, with a minimum avoidance area of 50 feet, until the squirrels have moved out of harm's way. A designated biologist (see Glossary of Terms) may also actively move squirrels out of harm's way.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					
LUPA-BIO-IFS-40: Activities sited in a Mohave ground squirrel linkage (see Appendix D) that may impact the linkage are required to analyze the potential effects on connectivity through the linkage. The activity must be designed to maintain the function of the linkage after construction/implementation and during project/activity operations. Linkage function will be assessed by considering pre- and post-activity ability of the area to support resident Mohave ground squirrels and provide for dispersal of their offspring to key population centers outside the linkage, and dispersal through the linkage between key population centers. Activities that occur in Mohave ground squirrel linkages shown in Appendix D must be configured and located in a manner that does not diminish Mohave ground squirrel populations in the linkage.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					
LUPA-BIO-IFS-41: For any ground-disturbing (e.g., vegetation removal, earthwork, trenching) activities, occurrences of Mohave ground squirrel will be flagged and avoided, with a minimum avoidance area of 50 feet, until the squirrels have moved out of harm's way. A designated biologist (see Glossary of Terms) may also actively move squirrels out of harm's way.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					
LUPA-BIO-IFS-42: Rodenticides will not be used to manage rodents on activity within the range of the Mohave ground squirrel. Use of rodenticide inside of buildings is allowed.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					
LUPA-BIO-COMP-1: Impacts to biological resources, identified and analyzed in the activity specific environmental document, from activities in the LUPA Decision Area will be compensated using the standard biological resources compensation ratio, except for the biological resources and specific geographic locations listed as compensation ratio exceptions, specifics in CMAs **LUPA-BIO-COMP-2** through **-4**, and previously listed CMAs. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization. Compensation for the impacts to designated desert tortoise critical habitat will be in the same critical habitat unit as the impact (see Table 18). Compensation for impacts to desert tortoise will be in the same recovery unit as the impact. Refer to CMA **LUPA-COMP-1** and **2** for the timing requirements for initiation or completion of compensation.	Yes	No	Partial	Yes	No	Partial
			X	X		
	There are no state or Federally protected plant species present in the Project area, so compensatory mitigation for plant species likely does not apply. Applicable for impacts to state waters. Applicable to desert tortoise, except that the requirement associated with designated critical habitat does not apply. Applicable to burrowing owl. Applicable to Mojave fringe-toed lizard.			Mitigation Measure VEG-9D specifies compensatory mitigation requirements for state and Federally protected plant species, if necessary. Mitigation Measure VEG-10 specifies compensatory mitigation for riparian areas and state waters. Mitigation Measure WIL-4 specifies compensatory mitigation requirements for desert tortoise. Mitigation Measure WIL-9.3 specifies compensatory mitigation requirements for burrowing owl. Mitigation Measure WIL-10 specifies compensatory mitigation requirements for Mojave fringe-toed lizard.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-BIO-COMP-2: Birds and Bats – The compensation for the mortality impacts to bird and bat Focus and BLM Special Status Species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every 5 years to fund compensatory mitigation. The initial compensation fee for bird and bat mortality impacts will be based on pre-project monitoring of bird use and estimated bird and bat species mortality from the activity. The approach to calculating the operational bird and bat compensation is based on the totai replacement cost for a given resource, a Resource Equivalency Analysis. This involves measuring the relative loss to a population (debt) resulting from an activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same "bird years" metric as described in Appendix D) is used to estimate the necessary compensation fee. Each activity, as determined appropriate by BLM in coordination with USFWS, and CDFW as applicable, will include a monitoring strategy to provide activity-specific information on mortality effects on birds and bats in order to determine the amount and type of compensation required to offset the effects of the activity, as described above and in detail in Appendix D. Compensation will be satisfied by restoring, protecting, or otherwise improving habitat such that the carrying capacity or productivity is increased to offset the impacts resulting from the activity. Compensation may also be satisfied by non-restoration actions that reduce mortality risks to birds and bats (e.g., increased predator control and protection of roosting sites from human disturbance). Compensation will be consistent with the most up to date DOI mitigation policy.	Yes	No	Partial	Yes	No	Partial
	X				X	
				BLM, USFWS, and Applicant will address the need for compensation through the BBCS.		
LUPA-BIO-COMP-3: Golden eagle – BLM and third-party initiated activities, will provide specific golden eagle compensation in accordance with the most up to date BLM or USFWS policies, including applicable USFWS Eagle Conservation Plan Guidance.	Yes	No	Partial	Yes	No	Partial
	X			X		
	The project will impact foraging habitat for golden eagles.			BLM, USFWS, and Applicant will address compensation for impacts to golden eagles through the BBCS.		
LUPA-BIO-COMP-4: Golden eagle – Third-party applicant/activity proponents are required to contribute to a DRECP-wide golden eagle monitoring program, if the activity/project(s) has been determined, through the environmental analysis, to likely impact golden eagles.	Yes	No	Partial	Yes	No	Partial
	X			X		
	The project will impact foraging habitat for golden eagles.			BLM, USFWS, and Applicant will address compensation for impacts to golden eagles through the BBCS.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-AIR-1: All activities must meet the following requirements: • Applicable National Ambient Air Quality Standards (Section 109) • State Implementation Plans (Section 110) • Control of Pollution from Federal Facilities (Section 118) including non-point source • Prevention of Significant Deterioration, including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.) • Conformity Analyses and Determinations (Section 176[c]) • Apply best management practices on a case by case basis • Applicable local Air Quality Management Jurisdictions (e.g., 403 SCAQMD)	Yes	No	Partial	Yes	No	Partial
			X	X		
	Section 4.2.1 states that the study area has no nonattainment or maintenance designations for any Federal AAQS. Consequently, there is no applicable State Implementation Plan, and formal CAA conformity requirements do not apply to Federal agency actions related to the Proposed Action or Alternatives. However, for the purposes of this analysis, the CAA conformity de minimis levels were used to gauge the potential for the Project and alternatives to result in an exceedance of Federal AAQS. The Project is not expected to have any stationary sources of emissions during the operational phase and will not store or handle substantive quantities hazardous materials during its construction and operation. Therefore, the Project will not be subject to the Federal stationary source regulations and requirements, such as Prevention of Significant Deterioration (PSD), New Source Review (NSR), New Source Performance Standards (NSPS), Maximum Achievable Control Technology (MACT), Federally Mandated Operating Permits, and Risk Management Plan (RMP).			Conformance with the specified requirements is addressed throughout Section 4.2.3.1. Compliance with NAAQSs (*de minimis* levels) is shown in Tables 4.2-3 and 4.2-4. Compliance with local MDAQMD CEQA thresholds is shown in Tables 4.2-2, 4.2-3, and 4.2-4. Best management practices to be followed by the Project are described in Section 2.3.7.6, Section 4.2.2, and Mitigation Measure AQ-1.		
LUPA-AIR-2: Because project authorizations are a federal undertaking, air quality standards for fugitive dust may not exceed local standards and requirements.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Tables 4.2-2 and 4.2-3 show that local standards for fugitive dust (PM10 and PM2.5) would be exceeded during Project construction. Although mitigation of fugitive dust emissions is required in Mitigation Measure AQ-1, such mitigation would not keep emissions below the MDAQMD thresholds. The emissions would be temporary, occurring only during construction. The local agencies will determine whether this conforms with their requirements.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-AIR-3: Where impacts to air quality may be significant under NEPA, requiring analysis through an Environmental Impact Statement, require documentation for activities to include a detailed discussion and analysis of Ambient Air Quality conditions (baseline or existing), National Ambient Air Quality Standards, criteria pollutant nonattainment areas, and potential air quality impacts of the proposed project (including cumulative and indirect impacts and greenhouse gas emissions). This content is necessary to disclose the potential impacts from temporary or cumulative degradation of air quality. The discussion will include a description and estimate of air emissions from potential construction and maintenance activities, and proposed mitigation measures to minimize net PM10 and PM2.5 emissions. The documentation will specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. A Construction Emissions Mitigation Plan will be developed.	Yes	No	Partial	Yes	No	Partial
	X			X		
				• Baseline ambient air quality conditions are discussed in Section 3.2.1.2, and Table 3.2-3. • Federal and state ambient air quality standards are defined in Table 3.2-2. • Criteria pollutant nonattainment status is defined in Table 3.2-4. • The direct and indirect air quality impacts of the Project are quantified and described in Section 4.2.3.1. • Cumulative impacts to air quality are discussed in Section 4.2.6. • Greenhouse gas emissions are quantified and described in Section 4.8.3.1. • Best management practices to be followed by the Project are described in Section 2.3.7.6, Section 4.2.2, and Mitigation Measure AQ-1. These include a requirement for a Dust Control Plan.		
LUPA-AIR-4: Because fugitive dust is the number one source of PM10 and PM2.5 emissions in the Mojave and Sonoran Deserts, fugitive dust impacts to air quality must be analyzed for all activities/projects requiring an Environmental Impact Statement and Environmental Assessment. The NEPA air quality analysis may include modelling of the sources of PM10 and PM2.5 that occur prior to construction and/or ground disturbance from the activity/project, and show the timing, duration and transport of emissions off site. When utilized, the modeling will also identify how the generation and movement of PM10 and PM2.5 will change during and after construction and/or ground disturbance of the activity/project under all activity/project specific NEPA alternatives. The BLM air resource specialist and Authorizing Officer will determine if modelling is required as part of the NEPA analysis based on estimated types and amounts of emissions.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.2.1 discusses the methodology that was used to model the fugitive dust emissions. The modeling report is provided in Appendix W. Section 4.2.3.1 describes the results, including a discussion of the timing with respect to construction versus operations. BLM has determined that the modeling provides sufficient information to support a NEPA analysis.		
LUPA-AIR-5: A fugitive Dust Control Plan will be developed for all projects where the NEPA analysis shows an impact on air quality from fugitive dust	Yes	No	Partial	Yes	No	Partial
	X			X		
				Best management practices to be followed by the Project are described in Section 2.3.7.6, Section 4.2.2, and Mitigation Measure AQ-1. These include a requirement for a Dust Control Plan.		
LUPA-CTTM-1: Maintain and manage adequate Road, Primitive Road, and Trail Access to and within SRMAs, ERMAs, OHV Open Areas, and Level 1, 2, and 3 Recreation Facilities.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Project would affect access roads to the Mule Mountains ACEC, which is a Level 3 recreation facility. The Applicant has identified alternative access routes, and Mitigation Measure REC-1 specifies measures to ensure that this access remains open.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-CTTM-2: Avoid activities that would have a significant adverse impact on use and enjoyment within 0.5 mile from centerline of tier 2 Roads/Primitive Roads, and 300 feet from centerline of tier 3 primitive roads/trails. If avoidance of Tier 2 and 3 roads, primitive roads and trails is not practicable, relocate access to the same or higher standard and maintain the setting characteristics and access to recreation activities, facilities, and destinations.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Project would eliminate access to Tier 2 and 3 routes within the Project boundaries. The Applicant has identified alternative access routes, and Mitigation Measure REC-1 specifies measures to ensure that this access remains open.		
LUPA-CTTM-3: Manage other significant linear features such as Mojave Road, Bradshaw Trail, or other recognized linear features to protect their important recreation activities, experiences and benefits. Prohibit activities that have a significant adverse impact on use and enjoyment within 0.5 mile (from centerline) of such linear features.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project is not located near the Mojave Trail. The EIS/EIR assesses the Bradshaw Trail, and shows that it terminates 4 miles from the Project area. There are no National Scenic and Historic Trails shown near the Project site on DRECP Figure D-27.					
LUPA-CTTM-4: If residual impacts to Tier 1 and Tier 2 roads/primitive roads, Back Country Byways, or significant linear features occur from adjacent DFAs or other activities, commensurate compensation in the form of enhanced recreation operations, access, recreation facilities or opportunities will be required.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Project would eliminate access to Tier 2 routes within the Project boundaries. The Applicant has identified alternative access routes, and Mitigation Measure REC-1 specifies compensation in the form of signage and provision of a kiosk.		
LUPA-CTTM-5: Manage OHV use per the appropriate Transportation and Travel Management Plan/RMP and/or the SRMA Objectives as outlined in Appendix C as Open, Limited or Closed.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (management of OHV use) which is not related to authorization of the Project.					
LUPA-CTTM-6: Manage Back Country Byways as a component of BLM Recreation and Travel and Transportation Management program.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (management of Back Country Byways) which is not related to authorization of the Project.					
LUPA-CTTM-7: Manage Recreation Facilities consistent with the objectives for the recreation management areas and facilities (see also Section II.4.2.1.10).	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (management of recreation facilities) which is not related to authorization of the Project.					
LUPA-CUL-1: Continue working with the California Office of Historic Preservation (OHP) to develop and implement a program for record keeping and tracking agency actions that meets the needs of BLM and OHP organizations pursuant to existing State and National agreements and regulation (BLM State Protocol Agreement; BLM National Programmatic Agreement).	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (tracking agency actions) which is not related to authorization of the Project.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-CUL-2: Using relevant archaeological and environmental data, identify priority geographic areas for new field inventory, based upon a probability for unrecorded significant resources and other considerations.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (identifying areas for new field inventory) which is not related to authorization of the Project.					
LUPA-CUL-3: Identify places of traditional cultural and religious importance to federally recognized Tribes and maintain access to these locations for traditional use.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 3.5.1.6.5 describes how tribes were contacted, at the direction of Native American Heritage Commission and BLM, in order to identify information on Traditional Cultural Places (TCPs). The contact did not result in the identification of any previously unknown TCPs.		
LUPA-CUL-4: Design activities to minimize impacts on cultural resources including places of traditional cultural and religious importance to federally recognized Tribes.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Sections 4.5.3.2 and 4.5.3.3 describe how re-configuration of the Project footprint in Alternatives 2 and 3 (respectively) is designed to minimize impacts to cultural resources.		
LUPA-CUL-5: Develop interpretive material to correspond with recreational uses to educate the public about protecting cultural resources and avoiding disturbance of archaeological sites.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (educating recreational users about cultural resources) which is not related to authorization of the Project.					
LUPA-CUL-6: Develop partnerships to assist in the training of groups and individuals to participate in site stewardship programs.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (developing partnerships) which is not related to authorization of the Project.					
LUPA-CUL-7: Coordinate with visual resources staff to ensure VRM Classes consider cultural resources and tribal consultation to include landmarks of cultural significance to Native Americans (TCPs, trails, etc.).	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (establishing VRM classes) which is not related to authorization of the Project.					
LUPA-CUL-8: Conduct regular contact and consultation with federally recognized Tribes and individuals, consistent with statute, regulation and policy.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The status of ongoing government-to-government consultation with Federally recognized tribes is discussed in Sections 1.9.1, 4.5.3.1, and 6.3.3.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-CUL-9: Promote DRECP desert vegetation types/communities by avoiding them where possible, then use required compensatory mitigation, off-site mitigation, and other means to ensure Native American vegetation collection areas and practices are maintained.	Yes	No	Partial	Yes	No	Partial
	X			X		
	All alternatives avoid special desert vegetation types to the extent possible. No Native American collection areas are present.					
LUPA-CUL-10: Promote and protect desert fan palm oasis vegetation type/communities by avoiding where possible, then use required compensatory mitigation, off-site mitigation, and other means to ensure Native American cultural values are maintained.	Yes	No	Partial	Yes	No	Partial
		X				
	The desert fan palm oasis vegetation type/community is not present at the project site.					
LUPA-CUL-11: Promote and protect desert microphyll woodland vegetation type/communities to ensure Native American cultural values are maintained.	Yes	No	Partial	Yes	No	Partial
	X			X		
	All alternatives would avoid the microphyll woodland.					
LUPA-LANDS-1: Identify acquired lands as right-of-way exclusion areas when development is incompatible with the purpose of the acquisition.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not acquired lands.					
LUPA-LANDS-2: Prioritize acquisition of land within and adjacent to conservation designation allocations. Acquired land in any land use allocation in this Plan will be managed according to the applicable allocation requirements and/or for the purposes of the acquisition. Management boundaries for the allocation may be adjusted to include the acquired land if the acquisition lies outside the allocation area through a future land use plan amendment process.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (acquiring land) which is not related to authorization of the Project.					
LUPA-LANDS-3: Within land use allocations where renewable energy and ancillary facilities are not allowed, an exception exists for geothermal development. Geothermal development will be an allowable use if a geothermal-only DFA overlays the allocation and the lease includes a no surface occupancy stipulation with exception of three specific parcels in the Ocotillo Wells SRMA (refer to the Ocotillo Wells SRMA Special Unit Management Plan in Appendix C).	Yes	No	Partial	Yes	No	Partial
		X				
	The project is not within a land use allocation where renewable energy is not allowed.					
LUPA-LANDS-4: Nonfederal lands within the boundaries of BLM LUPA land use allocations are not affected by the LUPA.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project does not involve non Federal lands within the boundaries of BLM land use allocations. The private land parcel is non Federal land. Although it is surrounded on all sides by Federal land, it would not be considered to be within the boundaries of a BLM LUPA land use allocation.					
LUPA-LANDS-5: The MUCs used to determine land tenure in the CDCA Plan will be replaced by areas listed in the CMAs below.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA applies to BLM internal land acquisition, which is not associated with the project.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-LANDS-6: Any activities on Catellus Agreement lands will be consistent with deed restrictions.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not associated with the Catellus lands.					
LUPA-LANDS-7: Any activities on Catellus Agreement lands will be subject to the approval of the California State Director.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not associated with the Catellus lands.					
LUPA-LANDS-8: The CDCA Plan requirement that new transmission lines of 161kV or above, pipelines with diameters greater than 12 inches, coaxial cables for interstate communications, and major aqueducts or canals for interbasin transfers of water will be located in designated utility corridors, or considered through the plan amendment process outside of designated utility corridors, remains unchanged. The only exception is that transmission facilities may be located outside of designated corridors within DFAs without a plan amendment. This CMA does not apply the Bishop and Bakersfield RMPs.	Yes	No	Partial	Yes	No	Partial
		X				
	The project is located within a DFA.					
LUPA-LANDS-9: Enter into land exchanges with the California State Lands Commission (CSLC) which convey BLM lands suitable for, or developed as, large-scale renewable energy related projects in exchange for CSLC school lands located in and adjacent to designated conservation areas. These exchanges will follow the procedures outlined in Memorandum of Agreement Relating to Land Exchanges to Consolidate Land Parcels signed by the BLM and CSLC on May 21, 2012.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (land exchanges) which is not related to authorization of the Project.					
LUPA-LANDS-10: Prioritize land exchange proposals from the CSLC on available lands if there are competing land tenure proposals (e.g., land sale or exchange), CSLC proposals that enhance revenues for schools will generally be given priority.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (land exchanges) which is not related to authorization of the Project.					
LUPA-LIVE-1: Adopt the Standards of Rangeland Health and Guidelines for Grazing Management, as detailed below, for the CDCA. This CMA does not apply in the Bishop and Bakersfield RMPs.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (establishing Standards of Rangeland Health) which is not related to authorization of the Project.					
LUPA-LIVE-2: In the CDCA only, accept grazing permit/lease donations in accordance with legislation in the Fiscal Year 2012 Appropriations Act (Public Law 112-74).	Yes	No	Partial	Yes	No	Partial
		X				
	The Project does not involve grazing permit/lease donations.					
LUPA-LIVE-3: In the Bishop and Bakersfield RMPs, determine whether continued livestock grazing would be compatible with achieving land use plan management goals and objectives in the event that the permit/lease is relinquished.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project is not located in the Bishop or Bakersfield RMPs.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-LIVE-4: If the BLM determines that the grazing allotment is to be put to a different public purpose than grazing, follow the notification requirements outline in the Grazing Regulations at 43 CFR 4110.4-2(b) and BLM Instruction Memorandum (IM) 2011-181 (BLM 2011), or future policy replacing IM 2011-181.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not within a grazing allotment, as shown on DRECP Figure D-21.					
LUPA-LIVE-5: For grazing allotments within the CDCA that BLM has received a voluntary request for relinquishment prior to fiscal year 2012, continue the planning process for making these allotments unavailable for grazing.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not within a grazing allotment, as shown on DRECP Figure D-21.					
LUPA-LIVE-6: Complete the process for approving rangeland health standards and guidelines for the CDCA Plan (NEMO, WEMO, NECO and PSSCRMP).	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (establishing Standards of Rangeland Health) which is not related to authorization of the Project.					
LUPA-LIVE-7: Make Pilot Knob, Valley View, Cady Mountain, Cronese Lake, and Harper Lake allotments, allocations unavailable for livestock grazing and change to management for wildlife conservation and ecosystem function. Reallocate the forage previously allocated to grazing use in these allotments to wildlife and ecosystem functions. Pilot Knob was closed in the WEMO plan amendment. The Cronese Lake, Harper Lake, and Cady Mountain allotments were closed as mitigation for the impacts to the Agassiz's desert tortoise resulting from the Fort Irwin expansion. All forage allocated to livestock grazing in these allotments will be reallocated to wildlife use and ecosystem function.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not associated with any of the referenced grazing allotments.					
LUPA-LIVE-8: The following vacant grazing allotments within the CDCA will have all vegetation previously allocated to grazing use reallocated to wildlife use and ecosystem functions and will be closed and unavailable to future livestock grazing: Buckhorn Canyon, Crescent Peak, Double Mountain, Jean Lake, Johnson Valley, Kessler Springs, Oak Creek, Chemehuevi Valley, and Piute Valley.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not associated with any of the referenced grazing allotments.					
LUPA-LIVE-9: Allocate the forage that was allocated to livestock use in the Lava Mountain and Walker Pass Desert allotments (which have already been relinquished under the 2012 Appropriations Act) to wildlife use and ecosystem function and permanently eliminate livestock grazing on the allotments.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not associated with any of the referenced grazing allotments.					
LUPA-MIN-1: High Potential Mineral Areas (identified in CA GEM data) • These areas have been identified as mineral lands having existing and/or historic mining activity and a reasonable probability of future mineral resource development. These identified areas will be designated as mineral land polygons on DRECP maps, recognized as probable future development areas for planning purposes and allowable use areas. • If an activity is proposed in a High Potential Mineral Area, analyze and consider the mineral resource value in the NEPA analysis.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not located in a High Potential Mineral Area, as shown on DRECP Figure D-22.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-MIN-2: Existing Mineral/Energy Operations Existing authorized mineral/energy operations, including existing authorizations, modifications, extensions and amendments and their required terms and conditions, are designated as an allowable use within all BLM lands in the LUPA Decision Area, and unpatented mining claims subject to valid existing rights. Amendments and expansions authorized after the signing of the DRECP LUPA ROD are subject to applicable CMAs, including ground disturbance caps within Ecological and Cultural Conservation Areas, subject to valid existing rights, subject to governing laws and regulations.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not associated with existing authorized mineral/energy operations.					
LUPA-MIN-3: Existing High Priority Mineral/Energy Operations Exclusion Areas • Existing high-priority operation footprints and their identified expansion areas are excluded from DFA and conservation CMAs, but must comply with LUPA-wide CMAs subject to the governing laws and regulations. • High priority operation exclusions are referenced by name with their respective footprint (acreage) below. MolyCorp REE (General Legal Description: 35° 26'N; 115° 29'W)—10,490.9 surface acres Briggs Au, Etna (General Legal Description: 35° 56'N; 117° 11'W)—3,216.9 surface acres Cadiz Evaporites (General Legal Description: 34° 17'N; 115° 23'W)—2,591.5 surface acres Searles Dry Lake (Evaporate) Operation (General Legal Description: 35° 43'N; 117° 19'W)—72,000 surface acres Bristol Dry Lake (Evaporate) Operation (General Legal Description: 34° 29'N; 115° 43'W)—3,500 surface acres Mesquite Gold Mine (General Legal Description: 33° 04'N; 114° 59'W)—4,500 surface acres Hector Mine (Hectorite Clay) (General Legal Description: 34° 45'N; 116° 25'W)— 1,500 surface acres Castle Mountain/Viceroy Mine (Gold) (General Legal Description: 35° 17'N; 115° 3'W)—5,000 surface acres	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not associated with any of the referenced High Priority Mineral/Energy Operations Exclusion Areas,					
LUPA-MIN-4: Access to Existing Operations • Established designated, approved, or authorized access routes to the aforementioned existing authorized operations and areas will be designated as allowable uses. • Access routes to Plans of Operations and Notices approved under 43 CFR 3809 will be granted subject to valid existing rights listed in 43 CFR 3809.100.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not associated with any of the aforementioned existing authorized operations and areas.					
LUPA-MIN-5: Areas Located Outside Identified Mineral Areas • Areas which could not be characterized due to insufficient data and mineral potential may fluctuate dependent on market economy, extraction technology, and other geologic information- requiring periodic updating. Authorizations are subject to the governing laws and regulations and LUPA requirements.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project does not involve new or expanded mineral operations or geothermal energy.					
LUPA-MIN-6: New or expanded mineral operations will be evaluated on a case-by-case basis, and authorizations are subject to LUPA requirements, and the governing laws and regulations.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project does not involve new or expanded mineral operations.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-NRT-1: The Nadeau Road NRT was designated by the Secretary of the Interior in June 2013. The California Desert District nominates the Sperry Wash Road, El Mirage Interpretive Trail East, and El Mirage Interpretive Trail West for NRT designation.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (designating National Recreational Trails) which is not related to authorization of the Project.					
LUPA-NRT-2: The Nadeau NRT Management Corridor will be protected and activities impacting use and enjoyment of the trail will be avoided within 0.5 mile from centerline of the route.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not associated with the Nadeau NRT.					
LUPA-PALEO-1: If not previously available, prepare paleontological sensitivity maps consistent with the Potential Fossil Yield Classification for activities prior to NEPA analysis.	Yes	No	Partial	Yes	No	Partial
	X			X		
				A map showing the potential for paleontological resources, with respect to the Potential Fossil Yield Classification (PFYC), is provided in the Paleontological Resources Technical report in Appendix T.		
LUPA-PALEO-2: Incorporate all guidance provided by the Paleontological Resources Protection Act.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The requirements of the Paleontological Resources Preservation Act are presented in Appendix D.13. These requirements are incorporated into Applicant-Proposed Measures Paleo-1 and Paleo-2.		
LUPA-PALEO-3: Ensure proper data recovery of significant paleontological resources where adverse impacts cannot be avoided or otherwise mitigated.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Applicant-Proposed Measure Paleo-2 requires data recovery.		
LUPA-PALEO-4: Paleontological surveys and construction monitors are required for ground disturbing activities that require an EIS.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Applicant-Proposed Measure Paleo-1 requires pre-construction surveys. As discussed in Applicant-Proposed Measure Paleo-2, the results of the survey will be used to determine which areas require monitoring.		
LUPA-REC-1: Maintain, and where possible enhance, the recreation setting characteristics – physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The impact of the Project on the recreation setting is discussed in Sections 4.10.3.1 (associated with land use impacts), 4.14.3.1 (associated with impacts to recreational uses), and 4.19.3.1 (associated with impacts to visual character).		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-REC-2: Cooperate with the network of communities and recreation service providers active within the planning area to protect the principal recreation activities and opportunities, and the associated conditions for quality recreation, by enhancing appropriate visitor services, and by identifying and mitigating impacts from development, inconsistent land uses and unsustainable recreation practices such as minimizing impacts to known rockhounding gathering areas.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.14 of the EIS discusses impacts to recreation facilities, including those managed by BLM and those managed by other local communities and agencies. BLM has worked with local tribes to ensure that access is maintained to areas of interest. The EIS/EIR includes community outreach efforts and the ability of local communities and recreation service providers to review and comment regarding impacts to recreation.		
LUPA-REC-3: Manage lands not designated as SRMAs or ERMAs to meet recreation and visitor services and resource stewardship needs as described in Resource Management Plans (RMPs).	Yes	No	Partial	Yes	No	Partial
	X			X		
				The impact of the Project on the recreation setting is discussed in Sections 4.10.3.1 (associated with land use impacts), 4.14.3.1 (associated with impacts to recreational uses), and 4.19.3.1 (associated with impacts to visual character).		
LUPA-REC-4: Prohibit activities that have a significant adverse impact and that do not enhance conservation or recreation values within one mile of Level 1 and Level 2 Recreation facility footprint.	Yes	No	Partial	Yes	No	Partial
		X				
	There are no Level 1 or 2 recreation facilities within one mile.					
LUPA-REC-5: Avoid activities that have a significant adverse impact and that do not enhance conservation or recreation values within one-half mile of Level 3 Recreation facility footprint including route access and staging areas. If avoidance is not practicable, the facility must be relocated to the same or higher recreation standard and maintain recreation objectives and setting characteristics.	Yes	No	Partial	Yes	No	Partial
		X				
	There are no Level 3 recreation facilities within one-half mile.					
LUPA-REC-6: Limit signage to that necessary for recreation facility/area identification, interpretation, education and safety/regulatory enforcement.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (providing signage at recreation facilities) which is not related to authorization of the Project.					
LUPA-REC-7: Refer to local RMPs, RMP amendments, and activity level planning for specially designated areas for Vehicular Stopping, Parking, and Camping limitations.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (establishing Vehicular Stopping, Parking, and Camping limitations) which is not related to authorization of the Project.					
LUPA-REC-8: Provide on-going maintenance of recreation and conservation facilities, interpretive and regulatory signs, roads, and trails.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (maintaining recreation and conservation facilities, interpretive and regulatory signs, roads, and trails) which is not related to authorization of the Project.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-SW-1: Stipulations or conditions of approval for any activity will be imposed that provide appropriate protective measures to protect the quantity and quality of all water resources (including ephemeral, intermittent, and perennial water bodies) and any associated riparian habitat (see biological CMAs for specific riparian habitat CMAs). The water resources to which this CMA applies will be identified through the activity-specific NEPA analysis.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The water resources to which the CMA applies are identified in Sections 3.20.1.1 (groundwater) and 3.20.1.2 (surface water). Section 3.20.1.2 includes ephemeral washes. Impacts to these resources are evaluated in Section 4.20.3. Applicant-Proposed Measures to protect water resources are discussed in Section 4.20.2, and mitigation measures are specified in Appendix G.20. Specific impacts and associated mitigation are addressed in the applicable CMAs below.		
LUPA-SW-2: Buffer zones, setbacks, and activity limitations specifically for soil and water (ground and surface) resources will be determined on an activity/site-specific basis through the environmental review process, and will be consistent with the soil and water resource goals and objectives to protect these resources. Specific requirements, such as buffer zones and setbacks, may be based, in part, on the results of the Water Supply Assessment defined below. In general, placement of long-term facilities within buffers or protected zones for soil and water resources is discouraged, but may be permitted if soil and water resource management objectives can be maintained.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Setbacks and activity limitations are defined for a variety of activities in order to protect soil and water resources. Applicant-Proposed activity limitations for protecting water resources are addressed in Section 4.9.2 for managing hazardous materials, and in Section 4.20.2 for construction activities. Section 4.9.2 establishes a buffer, prohibiting the storage of hazardous materials or re-fueling of vehicles within 100 feet of a wetland, water body, or water supply well. Mitigation Measure VEG-10.5 specifies that spoil sites shall not be located at least 30 feet from the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.		
LUPA-SW-3: Where a seeming conflict between CMAs within or between resources arises, the CMA(s) resulting in the most resource protection apply.	Yes	No	Partial	Yes	No	Partial
	X			X		
				There is a conflict between CMAs that require avoidance of sand dunes and certain habitat (LUPA-BIO-3, BIO-13, BIO-DUNE-2, BIO-DUNE-4, BIO-PLANT-2, BIO-PLANT 3, and TRANS-BIO-4) and those CMAs that require that transmission lines be placed within CDCA Plan-approved utility corridors (LUPA-BIO-13, LANDS-9, and TRANS-BIO-4). This is because the approved utility corridor adjacent to the Project is coincident with an active sand dune area that supports habitat for Harwood's eriastrum and Mojave fringe-toed lizard. BLM has determined that use of the approved corridor, in combination with species avoidance and compensation measures, provides the most resource protection.		
LUPA-SW-4: Nothing in the "Exceptions" below applies to or takes precedence over any of the CMAs for biological resources.	Yes	No	Partial	Yes	No	Partial
	X			X		
				BLM has considered this CMA, and determined that none of the exceptions takes precedence over CMAs for biological resources.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-SW-5: Exceptions to any of the specific soil and water stipulations contained in this section, as well as those listed below under the subheadings "Soil Resources," "Surface Water," and "Groundwater Resources," may be granted by the authorized officer if the applicant submits a plan, or, for BLM-initiated actions, the BLM provides documentation, that demonstrates: The impacts are minimal (e.g., no predicted aquifer drawdown beyond existing annual variability in basins where cumulative groundwater use is not above perennial yield and water tables are not currently trending downward) or can be adequately mitigated.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Applicant has not requested any exceptions to the stipulations, at this time.		
LUPA-SW-6: In addition to the applicable required governmental safeguards, third party activities will implement up-to-date standard industry construction practices to prevent toxic substances from leaching into the soil.	Yes	No	Partial	Yes	No	Partial
	X			X		
				• Section 2.3.7.1 describes Hazardous Material and Waste Management procedures which are part of the Proposed Action, and Section 2.3.7.9 describes the Stormwater Management procedures. • Section 4.20.2 describes the Applicant's proposed Construction Stormwater Pollution Prevention Plan (SWPPP). • Applicant-Proposed Measure BIO-2 specifies the construction related plans to be followed. These include plans to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation-type streams (Waste Management Plan, Spill Prevention Control and Countermeasures Plan, and Hazardous Materials Plan), and plans to address drainage, erosion, and sedimentation control (SWPPP). • Applicant-Proposed Measure BIO-3 describes construction BMPs which address these topics. • Mitigation Measure WATER-1 provides further specification of the requirements for the Construction SWPPP. Mitigation Measures WATER-2 describes further requirements of the Comprehensive Drainage, Stormwater, and Sedimentation Control Plan.		
LUPA-SW-7: Prepare an emergency response plan, approved by the BLM contaminant remediation specialist, that ensures rapid response in the event of spills of toxic substances over soils.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Sections 2.3.7.1, 4.9.1, and 4.9.2 describe the Applicant's Preliminary Hazardous Materials Management and Emergency Response Plan. Additional requirements for the Plan are provided in Mitigation Measures HAZ-1 and Fire-1.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-SW-8: As determined necessary on an activity specific basis, prepare a site plan specific to major soil types present (≥5% of footprint or laydown surfaces) in Wind Erodibility Groups 1 and 2 and in Hydrology Soil Class D as defined by the USDA Natural Resource Conservation Service to minimize water and air erosion from disturbed soils on activity sites.	Yes	No	Partial	Yes	No	Partial
	X			X		
	The project is not situated in Hydrology Soil Class D, but is located in Wind Erodibility Groups 1 and 2.			The potential for wind erosion is evaluated in EIS/EIR Section 4.7.3.1. The Applicant proposes to prepare a SWPPP which would address erosion control. In addition, mitigation measures AIR-1 specifies the requirements for controlling fugitive dust emissions through a Dust Control Plan.		
LUPA-SW-9: The extent of desert pavement within the proposed boundary of an activity shall be mapped if it is anticipated that the activity may create erosional or ecologic impacts. Mapping will use the best available data and standards, as determined by BLM. Disturbance of desert pavement within the boundary of an activity shall be limited to the extent possible. If disturbance from an activity is likely to exceed 10% of the desert pavement mapped within the activity boundary, the BLM will determine whether the erosional and ecologic impacts of exceeding the 10% cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement disturbance.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Figure 3 of the BRTR shows that desert pavement was mapped, but is not present within the Project footprint. Mitigation Measure AIR-2 specifies requirements for stabilizing desert pavement, if it is found and disturbed.		
LUPA-SW-10: The extent of additional sensitive soil areas (cryptobiotic soil crusts, hydric soils, highly corrosive soils, expansive soils, and soils at severe risk of erosion) shall be mapped if it is anticipated that an activity will impact these resources. To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.	Yes	No	Partial	Yes	No	Partial
			X	X		
	Hydric soils are not present in the area, as discussed in Section 4.2 of the Federal Jurisdictional Delineation Report, provided in Appendix I. As discussed in Table 3 of the Federal Jurisdictional Delineation Report (Appendix I), biotic crusts were evaluated as a part of the jurisdictional delineation. No biotic crusts were identified. Mitigation Measure VEG-8.17 requires that revegetation include inoculation of microbial organisms for plant mycorrhizae and for biotic soil crust formation.			Sections 3.7.1.2 and 3.7.1.3 discuss expansive, corrosive, and erodible soils.		
LUPA-SW-11: Where possible, side casting shall be avoided where road construction requires cut- and-fill procedures.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Road construction using cut-and-fill procedures is not proposed as part of the Project.		
LUPA-SW-12: Except in DFAs, exclude long-term structures in, playas (dry lake beds), and Wild and Scenic River corridors, except as allowed with minor incursions (see definition in the Glossary of Terms).	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is located in a DFA.					
LUPA-SW-13: BLM will manage all riparian areas to be maintained at, or brought to, proper functioning condition.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site does not include any riparian areas.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-SW-14: All relevant requirements of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) will be complied with.	Yes	No	Partial	Yes	No	Partial
		X				
	Section 3.3.1.3 discusses the results of the jurisdictional delineation, and shows that no wetlands are present on the Project site. A more detailed discussion of the investigation of wetlands, and conclusion that wetland vegetation is not present, is provided in Section 4.1 of the Federal Jurisdictional Delineation Report, provided in Appendix I. The Project site is not located within a 100-year floodplain.					
LUPA-SW-15: Surface water diversion for beneficial use will not occur absent a state water right.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project does not include diversion of surface water for beneficial use.					
LUPA-SW-16: The 100-year floodplain boundaries for any surface water feature in the vicinity of the project will be identified. If maps are not available from the Federal Emergency Management Agency (FEMA), these boundaries will be determined via hydrologic modeling and analysis as part of the environmental review process. Construction within, or alteration of, 100-year floodplains will be avoided where possible, and permitted only when all required permits from other agencies are obtained.	Yes	No	Partial	Yes	No	Partial
	X			X		
				As discussed in Section 1.5.8 of the Federal Jurisdictional Delineation Report (Appendix I), FEMA has not conducted a flood hazard analysis of the Project area, so no FEMA flood zone designation exists. The impact of a 100-year flood on surface water flow has been modeled, to support the environmental review process. The modeling effort and results are described in the Drainage Report (Appendix V), and discussed in the EIS/EIR in Sections 3.20.1.2 and 4.20.3.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-SW-17: An activity's groundwater extraction shall not contribute to exceeding the estimated perennial yield for the basin in which the extraction is taking place. Perennial yield is that quantity of groundwater that can be withdrawn from the groundwater basin without exceeding the long-term recharge of the basin or unreasonably affecting the basin's physical, chemical, or biological integrity. It is further clarified arithmetically below.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The perennial yield in the ground water basin has not been specifically calculated. The Applicant's Proposed Groundwater Use – Numerical Groundwater Modeling Report (Appendix X) presents the methodology and results from the analysis of proposed groundwater withdrawal. The groundwater budget presented in Table 3.20-1 is a variation of the formula for calculating change in storage and perennial yield in the CMA. However, the analysis uses different terminology, and does not specifically refer to perennial yield. The end product of the analysis is a calculation of the total cone of depression, based on a cumulative analysis of all known water uses in the basin. The methodology used was approved by BLM staff in conference calls and technical reviews before the modeling effort was done. The resulting Groundwater Modeling Report was also reviewed and approved by BLM staff. The estimated groundwater balance from the basin is presented in Table 3.20-1, and discussed in Section 3.20.1.1. The analysis in Section 4.20.3 is based on estimated amount of drawdown, and concludes that the drawdown would be negligible compared to the thickness of the aquifer. To ensure that the actual groundwater drawdown does not exceed the predicted drawdown, Mitigation Measure Water-4 requires that the Applicant develop and implement a Groundwater Monitoring and Mitigation Plan prior to construction.		
LUPA-SW-18: Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the project shall be solely for the beneficial use of the project or its associated mitigation and remediation measures, as specified in approved plans and permits.	Yes	No	Partial	Yes	No	Partial
	X			X		
				There are no other uses proposed for the extracted groundwater, other than to support construction, operation, and decommissioning of the Project.		
LUPA-SW-19: Water flow meters shall be installed on all extraction wells permitted by BLM.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure Water-4 specifies the groundwater monitoring requirements for the Project, including installation of flow meters.		
LUPA-SW-20: After application of applicable avoidance and minimization measures, all remaining unavoidable residual impacts to surface waters from the proposed activity shall be mitigated to ensure no net loss of function and value, as determined by the BLM.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.20.7 discusses residual impacts to water resources, and concludes that changes to stormwater flow characteristics would be minor, even with implementation of mitigation measures.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-SW-21: Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they will dissipate by percolation into the landscape.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Impacts to existing hydrology are discussed in Section 4.20.3, which concludes that hydrology would likely be altered for the duration of ROW operation. The compacted and developed site could increase the rate, volume, and sediment load of storm water runoff traveling offsite. As discussed in Section 2.3.4.3, the site preparation components of the Project design were limited to minimize modification of surface water hydrology. As discussed in Sections 2.5 and 2.6, Alternatives 2 and 3 were specifically developed to avoid the locations of watercourses and drainages.		
LUPA-SW-22: All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the project area, or specific mitigation measures shall be implemented that will minimize unavoidable water quality or quantity impacts, as determined by BLM in coordination with USFWS, CDFW, and other agencies, as appropriate. These beneficial uses may include municipal, domestic, or agricultural water supply; groundwater recharge; surface water replenishment; recreation; water quality enhancement; flood peak attenuation or flood water storage; and wildlife habitat.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Table 3.20-9 discusses the beneficial uses of the intermittent washes on the Project site. These include intermittent groundwater recharge, non-contact water recreation, and wildlife habitat. Section 4.20.3 evaluates impacts to surface water drainage patterns and water quality. The Applicant's proposed site preparation techniques (described in Section 2.3.4.3) and Mitigation Measures WATER-1 and WATER-2 are intended to minimize modifications to drainage patterns and water quality.		
LUPA-SW-23: A Water (Groundwater) Supply Assessment shall be prepared in conjunction with the activity's NEPA analysis and prior to an approval or authorization. This assessment must be approved by the BLM in coordination with USFWS, CDFW, and other agencies, as appropriate, prior to the development, extraction, injection, or consumptive use of any water resource. Note – the text of the CMA is too lengthy to provide in full within this table. Please see the full text in Pages 142-145 of the DRECP.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Applicant's Proposed Groundwater Use – Numerical Groundwater Modeling Report (Appendix X) presents the methodology and results from the analysis of proposed groundwater withdrawal. The groundwater budget presented in Table 3.20-1 is a variation of the formula for calculating change in storage and perennial yield in the CMA. However, the analysis uses different terminology, and does not specifically refer to perennial yield. The end product of the analysis is a calculation of the total cone of depression, based on a cumulative analysis of all known water uses in the basin. The methodology used was approved by BLM staff in conference calls and technical reviews before the modeling effort was done. The resulting Groundwater Modeling Report was also reviewed and approved by BLM staff. To ensure that the actual groundwater drawdown does not exceed the predicted drawdown, Mitigation Measure Water-4 requires that the Applicant develop and implement a Groundwater Monitoring and Mitigation Plan prior to construction.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-SW-24: A Groundwater Monitoring and Reporting Plan, and Mitigation Action Plan shall be prepared to verify the Water Supply Assessment and adaptively manage water use as part of project operations. This plan shall be approved by BLM, in coordination with USFWS, CDFW, and other agencies as appropriate, prior to the development, extraction, injection, or consumptive use of any water resource. The quality and quantity of all surface water and groundwater used for the project shall be monitored and reported using this plan. Groundwater monitoring includes measuring the effects of a project's groundwater extraction on groundwater surface elevations, groundwater flow paths, changes to groundwater-dependent vegetation, and of aquifer recovery after project decommissioning. Surface water monitoring, if applicable, shall monitor for changes in the flows, water volumes, channel characteristics, and water quality as a result of a project's surface water use. Monitoring frequency and geographic scope and reporting frequency shall be decided on a project and site-specific basis and in coordination with the appropriate agencies that manage the water and land resources of the region. The geographic scope may include at the very least, all basins/sub-basins that potentially receive inflow from the basin where the proposed project may be sited, and all basins/sub-basins that may potentially contribute inflow to the basin where the proposed project is located. The plan shall also detail any mitigation measures that may be required as a result of the project. This plan and all monitoring results shall be made available to BLM. BLM will make the plan and results available to USFWS, CDFW, and other applicable agencies.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure Water-4 requires that the Applicant develop and implement a Groundwater Monitoring and Mitigation Plan prior to construction.		
LUPA-SW-25: Where groundwater extraction, in conjunction with other cumulative impacts in the basin, has potential to exceed the basin's perennial yield or to impact water resources, one or more "trigger points," or specified groundwater elevations in specific wells or surface water bodies, shall be established by BLM. If the groundwater elevation at the designated monitoring wells falls below the trigger point(s)(or exceeds the trigger pumping rate), additional mitigation measures, potentially including cessation of pumping, will be imposed.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure Water-4 (Groundwater Monitoring and Mitigation Plan) requires that, if significant drawdown occurs at offsite wells, the Applicant shall immediately reduce groundwater pumping until water levels stabilize or recover.		
LUPA-SW-26: Groundwater pumping mitigation shall be imposed if groundwater monitoring data indicate impacts on water-dependent resources that exceed those anticipated and otherwise mitigated for in the NEPA analysis and ROD, even if the basin's perennial yield is not exceeded. Water-dependent resources include riparian or phreatophytic vegetation, springs, seeps, streams, and other approved domestic or industrial uses of groundwater. Mitigation measures may include changes to pumping rates, volume, or timing of water withdrawals; coordinating and scheduling groundwater pumping activities in conjunction with other users in the basin; acquisition of project waterfrom outside the basin; and/or replenishing the groundwater resource over a reasonably short timeframe. For permitted activities, permittees may also be required to contribute funds to basin-wide groundwater monitoring networks in basins such as those encompassed by the East Riverside DFA or in the Calvada Springs/South Pahrump Valley area, and to cooperate in the compilation and analysis of groundwater data.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure Water-4 (Groundwater Monitoring and Mitigation Plan) requires that, if significant drawdown occurs at offsite wells, the Applicant shall immediately reduce groundwater pumping until water levels stabilize or recover.		
LUPA-SW-27: Water-conservation measures shall be required in basins where current groundwater demand is high and has the future potential to rise above the estimated perennial yield (e.g., Pahrump Valley). These measures may include the use of specific technology, management practices, or both. A detailed discussion and analysis of the effectiveness of mitigation measures must be included. Application of these measures shall be detailed in the Groundwater Water Monitoring and Mitigation Plan.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Applicant proposes to develop a ground water monitoring and mitigation plan approved by the BLM.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-SW-28: Groundwater extractions from adjudicated basins, such as the Mojave River Basin, may be subject to additional restrictions imposed by the designated authority; examples include the Mojave Water Agency and San Bernardino County (see County Ordinance 3872). Where provisions of the adjudication allow for acquisition of water rights, project developers could be required to retire water rights at least equal in volume to those necessary for project operation or propose an alternative offset based on the conditions unique to the adjudicated basin.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.20.3 discusses the groundwater withdrawal with respect to the Accounting Surface methodology, including whether the Applicant would be required to obtain an allocation of water from the Colorado River. BLM has determined that the existing groundwater and technical report conforms to this CMA.		
LUPA-SW-29: Groundwater pumping mitigation may be imposed if monitoring data indicate impacts on groundwater or groundwater-dependent habitats outside the DRECP area, including those across the border in Nevada. See **LUPA-SW-26** for potential mitigation measures.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure Water-4 (Groundwater Monitoring and Mitigation Plan) requires that, if significant drawdown occurs at offsite wells, the Applicant shall immediately reduce groundwater pumping until water levels stabilize or recover. The wells to be monitored, including whether it would include wells outside of the DRECP (i.e., in Arizona), are not specified. However, as discussed in Section 4.20.3, the modeled drawdown is expected to be negligible at the Project boundary. Therefore, it is highly unlikely that effects would extend several miles offsite.		
LUPA-SW-30: Activities shall comply with local requirements for any long term or short term domestic water use and wastewater treatment.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Appendix D.20 discusses local permitting requirements for drinking and sanitary water supplies. Section 2.3.3.9 discusses the local (county) permits that would be obtained to address sanitary waste disposal.		
LUPA-SW-31: The siting, construction, operation, maintenance, remediation, and abandonment of all wells shall conform to specifications contained in the California Department of Water Resources Bulletins #74-81 and #74-90 and their updates.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Appendix D.20 specifies these requirements as applicable to the Project.		
LUPA-SW-32: Colorado River hydrologic basin - The concepts, principles and general methodology used in the Colorado River Accounting Surface Method, as defined in U.S. Geological Survey Scientific Investigations Report 2008-5113 (USGS 2009), and existing and future updates or a similar methodology, are considered the best available data for assessing activity/project related ground water impacts in the Colorado River hydrologic basin. The best available data and methodology shall be used to determine whether activity/project-related pumping would result in the extracted water being replaced by water drawn from the Colorado River. If activity/project-related groundwater pumping results in the static groundwater level at the well being near (within 1 foot), equal to, or below the Accounting Surface in a basin hydrologically connected to the Colorado River, that consumption shall be considered subject to the Law of the River (Colorado River Compact of 1922 and amendments). In such circumstances, BLM shall require the applicant to offset or otherwise mitigate the volume of water causing drawdown below the Accounting Surface. Details of such mitigation measures and the right to the use of water shall be described in the Groundwater Water Monitoring and Mitigation Plan.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.20.3 discusses the groundwater withdrawal with respect to the Accounting Surface methodology, including whether the Applicant would be required to obtain an allocation of water from the Colorado River. BLM has determined that the existing groundwater and technical report conforms to this CMA.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-SW-33: Stipulations for groundwater development in the proximity of Devils Hole: Any development scenario for an activity within 25 miles of Devils Hole shall include a plan to achieve zero-net or net-reduced groundwater pumping to reduce the risk of adversely affecting senior federal reserved water rights, the designated critical habitat of the endangered Devils Hole pupfish, and the free-flowing requirements of the Wild and Scenic Amargosa River. This plan will require operators to acquire one or more minimization water rights (MWRs) in the over-appropriated, over-pumped, and hydraulically connected Amargosa Desert Hydrographic Basin in Nevada. The MWR(s) shall be: (1) an amount equal (at minimum) to that which is needed for construction and operations; (2) historically fully utilized, preferably for agricultural use; and (3) senior and closer to Devils Hole than the proposed point of diversion.	Yes	No	Partial	Yes	No	Partial
		X				
	The project site is not located within 25 miles of Devils Hole.					
LUPA-SW-34: Stipulations for groundwater development in the Calvada Springs/South Pahrump Valley area: Activities in this area shall be required to acquire one or more MWRs in the Pahrump Valley Hydrographic Basin in Nevada. The acquired MWR(s) must: (1) be at least equal to the amount proposed to be required and actually used for project construction and operations; and (2) be fully utilized for at least the prior ten years.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not located in the Calvada Springs/South Pahrump Valley area.					
LUPA-SW-35: Stipulations for activities in the vicinity of Death Valley National Park, Joshua Tree National Park, or Mojave National Preserve: The NEPA for activities involving groundwater extraction that are in the vicinity of Death Valley National Park, Joshua Tree National Park, or the Mojave National Preserve shall analyze and address any potential impacts of groundwater extraction on Death Valley National Park, Joshua Tree National Park, or Mojave National Preserve. BLM will consult with the National Park Service on this process. The analysis or analyses shall include: • Potential impacts on the water balances of groundwater basins within these parks and preserves • A map identifying all potentially impacted surface water resources in the vicinity of the project, including a narrative discussion of the delineation methods used to discern those surface waters in the field • Any project-related modifications to surface water resources, both temporary and permanent • Analysis of any potential impacts on perennial streams, intermittent streams, and ephemeral drainages that could negatively impact natural riparian buffers • Impacts of any project proposed truncation, realignment, channelization, lining, or filling of surface water resources that could change drainage patterns, reduce available riparian habitat, decrease water storage capacity, or increase water flow velocity or sediment deposition, in particular where stormwater diverted around or through the project site is returned to natural drainage systems downslope of the project • Any potential indirect project-related causes of hydrologic changes that could exacerbate flooding, erosion, scouring, or sedimentation in stream channels • Alternatives and mitigation measures proposed to reduce or eliminate such impacts	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not in the vicinity of Death Valley, Joshua Tree, or Mojave National Preserve.					
LUPA-VRM-1: Manage Visual Resources in accordance with the VRM classes shown on Figure 9.	Yes	No	Partial	Yes	No	Partial
		X				
	This CMA is overridden by DFA-VRM-1.					
LUPA-VRM-2: Ensure that activities within each of the VRM Class polygons meets the VRM objectives described above, as measured through a visual contrast rating process.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.19.1.1 describes the Visual Contrast Rating process used to evaluate the Project with respect to the applicable VRM Class.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-VRM-3: Ensure that transmission facilities are designed and located to meet the VRM Class objectives for the area in which they are located. New transmission lines routed through designated corridors where they do not meet VRM Class Objectives will require RMP amendments to establish a conforming VRM Objective. All reasonable effort must be made to reduce visual contrast of these facilities in order to meet the VRM Class before pursing RMP amendments. This includes changes in routing, using lattice towers (vs. monopole), color treating facilities using an approved color from the BLM Environmental Color Chart CC-001 (dated June 2008, as updated on April 2014, or the most recent version) (vs. galvanized) on towers and support facilities, and employing other BMPs to reduce contrast. Such efforts will be retained even if an RMP amendment is determined to be needed. Visual Resource BMPs that reduce adverse visual contrast will be applied in VRM Class conforming situations. For a reference of BMPs for reducing visual impacts see the "*Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*", available at http://www.blm.gov/style/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/energy/renewable_references.Par.1568.File.dat/RenewableEnergy VisualImpacts_BMPs.pdf, or the most recent version of the document or BMPs for VRM, as determined by BLM.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure VIS-1 describes design elements, including structure and color requirements, as well as additional lighting requirements, which will be required to reduce visual impacts. The measure includes requirements for the gen-tie line, and references the Best Management Practices document.		
LUPA-WC-1: Complete an inventory of areas for proposed activities that may impact wilderness characteristics if an updated wilderness characteristics inventory is not available.	Yes	No	Partial	Yes	No	Partial
		X				
	Section 3.16.1.3 discusses the recent inventory, conducted in 2016.					
LUPA-WC-2: Employ avoidance measures as described under DFAs and approved transmission corridors.	Yes	No	Partial	Yes	No	Partial
		X				
	Section 4.16.3.1 discusses the closest land with wilderness characteristics, which are more than 10 miles away.					
LUPA-WC-3: For inventoried lands found to have wilderness characteristics but not managed for those characteristics compensatory mitigation is required if wilderness characteristics are directly impacted. The compensation will be: • 2:1 ratio for impacts from any activities that impact those wilderness characteristics, except in DFAs and transmission corridors • 1:1 ratio for impact from any activities that impact the wilderness characteristics in DFAs and transmission corridors Wilderness compensatory mitigation may be accomplished through acquisition and donation, by willing landowners, to the federal government of (a) wilderness inholdings, (b) wilderness edge holdings that have inventoried wilderness characteristics, or (c) other areas within the LUPA Decision Area that are managed to protect wilderness characteristics. Restoration of impaired wilderness characteristics in Wilderness, Wilderness Study Area, and lands managed to protect wilderness characteristics could be substituted for acquisition.	Yes	No	Partial	Yes	No	Partial
		X				
	Section 4.16.3.1 discusses the closest land with wilderness characteristics, which are more than 10 miles away.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-WC-4: For areas identified to be managed to protect wilderness characteristics, identified in Figure 7, the following CMAs are required: • Include a no surface occupancy stipulation for any leasable minerals with no exceptions, waivers, or modifications. • Exclude these areas from land use authorizations, including transmission. • Close areas to construction of new roads and routes. Vehicles will continue to be permitted on existing designated routes. • Close areas to mineral material sales. • Prohibit commercial or personal-use permits for extraction of materials (e. g. no wood-cutting permits). • Manage the area as VRM II. • Require that new structures and facilities are related to the protection or enhancement of wilderness characteristics or are necessary for the management of uses allowed under the land use plan. • Make lands unavailable for disposal from federal ownership.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not located in an area managed to protect wilderness characteristics, as shown in DRECP Figure 7.					
LUPA-WC-5: Manage the following Wilderness Inventory Units to protect wilderness characteristics: (see list on Pages 152 to 153 of the DRECP)	Yes	No	Partial	Yes	No	Partial
		X				
	The Wilderness Inventory Units associated with the Project site (1351 and 1351A-1, see Section 4.16.3.1) are not among the units listed within this CMA.					
LUPA-TRANS-BIO-1: Where feasible and appropriate for resource protection, site transmission activities along roads or other previously disturbed areas to minimize new surface disturbance, reduce perching opportunities for the Common Raven, and minimize collision risks for birds and bats.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 2.3.3.2 describes the location of the proposed gen-tie line which is in an existing, previously disturbed utility corridor, with existing access roads.		
LUPA-TRANS-BIO-2: Flight diverters will be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. The type of flight diverter selected will be subject to approval by BLM, in coordination with USFWS and CDFW as appropriate, and will be based on the best available scientific and commercial data regarding the prevention of bird collisions with transmission and guy wires.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site does not include any water bodies.					
LUPA-TRANS-BIO-3: When siting transmission activities, the alignment should avoid, to the maximum extent practicable, being located across canyons or on ridgelines. Site and design sufficient distance between transmission lines to prevent electrocution of condors.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The gen-tie alignment does not cross any canyons or ridgelines.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-TRANS-BIO-4: Siting of transmission activities will be prioritized within designated utility corridors, where possible, and designed to avoid, where possible, and otherwise minimize and offset impacts to sand transport processes in Aeolian corridors, rare vegetation alliances and Focus and BLM Special Status Species. Transmission substations will be sited to avoid Aeolian corridors, rare vegetation alliances, and sand-dependent Focus and BLM Special Status Species habitats.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 2.3.3.2 describes the location of the proposed gen-tie line which is in an existing, previously disturbed utility corridor. Table 4.3-3 evaluates the impact of the gen-tie line on special status plants, and shows that impacts would occur to Harwood's eriastrum under the Proposed Action, but not under Alternatives 2 or 3. Table 4.4.3 evaluates the impact of the gen-tie line on special status wildlife, and shows that impacts would occur to Mojave fringe-toed lizard under all alternatives.		
LUPA-TRANS-CUL-1: For transmission (and renewable energy) activities, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism: • All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity. • All appropriate costs associated with preliminary sensitivity analysis. • All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process. • All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.	Yes	No	Partial	Yes	No	Partial
		X				
	BLM will address costs and fees associated with cultural resources through the Section 106 process.					
LUPA-TRANS-CUL-2: Consistent and in compliance with the NHPA Programmatic Agreement, signed February 5, 2016, or the most up to date signed version – for transmission (and renewable energy) activities, a compensatory mitigation fee will be required within the LUPA Decision Area to address cumulative and some indirect adverse effects to historic properties. The mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the project. Refer to the NHPA Programmatic Agreement for details regarding the mitigation fee.	Yes	No	Partial	Yes	No	Partial
		X				
	BLM will address costs and fees associated with cultural resources through the Section 106 process.					
LUPA-TRANS-CUL-3: For transmission (and renewable energy) activities, the management fee rate will be determined through the NHPA programmatic Section 106 consultation process that will be completed as part of the DRECP land use plan amendment.	Yes	No	Partial	Yes	No	Partial
		X				
	BLM will address costs and fees associated with cultural resources through the Section 106 process.					
LUPA-TRANS-CUL-4: For transmission (and renewable energy) activities, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.5 discusses how the footprints of alternatives were developed specifically to avoid cultural resources. All surveys were conducted in accordance with protocols in place at the time of the NOI, under the direction of BLM cultural staff assigned to the Project.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-TRANS-CUL-5: For transmission (and renewable energy) activities, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.	Yes	No	Partial	Yes	No	Partial
	X			X		
	Section 3.5.1.6.6 discusses the protocols used for the field inventory investigations.					
LUPA-TRANS-CUL-6: For transmission (and renewable energy) activities, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.	Yes	No	Partial	Yes	No	Partial
	X			X		
	The POD and Chapter 1of the EIS/EIR identity the Purpose and Need of the project, which provides the justification.					
LUPA-TRANS-CUL-7: For transmission (and renewable energy) activities, complete the NHPA Section 106 Process as specified in 36 CFR Part 800, or via an alternate procedure, allowed for under 36 CFR Part 800.14 prior to issuing a ROD or ROW grant on any utility- scale renewable energy or transmission project. For utility-scale solar energy developments, the BLM may follow the Solar Programmatic Agreement.	Yes	No	Partial	Yes	No	Partial
	X			X		
	Section 4.5.3.1 evaluates the Project with respect to the NHPA Section 106 Process.					
LUPA-TRANS-WC-1: Allow transmission activities in areas inventoried and identified as lands with wilderness characteristics.	Yes	No	Partial	Yes	No	Partial
		X				
	Section 4.16.3.1 discusses the closest land with wilderness characteristics, which are more than 10 miles away.					
LUPA-TRANS-WC-2: For inventoried lands found to have wilderness characteristics impacted by transmission activities, compensatory mitigation is required at a 1:1 ratio if wilderness characteristics are directly impacted. This may be accomplished through acquisition and donation, from willing landowners, to the federal government of (a) wilderness inholdings, (b) wilderness edge holdings that have inventoried wilderness characteristics, or (c) other areas within the LUPA Decision Area that are managed to protect wilderness characteristics. Restoration of impaired wilderness characteristics in Wilderness, Wilderness Study Area, and lands managed to protect wilderness characteristics could be substituted for acquisition.	Yes	No	Partial	Yes	No	Partial
		X				
	Section 4.16.3.1 discusses the closest land with wilderness characteristics, which are more than 10 miles away.					
LUPA-COMP-1: For third party actions, compensation activities must be initiated or completed within 12 months from the time the resource impact occurs (e.g. ground disturbance, habitat removal, route obliteration, etc. for construction activities; wildlife mortality, visual impacts, etc. due to operations). • BLM will determine, in the environmental analysis, the activity/project-level timing of the compensation (i.e. initiated, completed or a combination) based on the specific resources being impacted, and scope and content of the activity. • A 6 month extension may be authorized, subject to approval by the authorizing officer, dependent on the resources impacted and compensation due diligence of the project developer.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The mitigation measures which require compensatory mitigation (Mitigation Measure VEG-9C, WIL-4, WIL-9.3, and WIL-10) each specify a timeframe in which compensatory mitigation must be completed.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
LUPA-COMP-2: For BLM initiated activities, compensation activities will be initiated or completed within 12 months from the time the resource impact occurs (e.g. ground disturbance, habitat removal, route obliteration, etc. for construction activities; wildlife mortality, visual impacts, etc. due to operations), subject to federal budget appropriations. • BLM will determine, in the environmental analysis, the activity/project-level timing of its compensation (i.e. initiated, completed or a combination) based on the specific resources being impacted, and scope and content of its activity. -The estimated costs and 12 month timing of required compensation will be built into the activity/project design and environmental analysis.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project is not a BLM initiated activity.					
DFA-VPL-BIO-DUNE-1: Activities in DFAs and VPLs, including transmission substations, will be sited to avoid dune vegetation (i.e., North American Warm Desert Dune and Sand Flats). Unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms) to dune vegetation will be limited to transmission projects, except transmission substations, and access roads that will be sited to minimize unavoidable impacts. • For unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms) to dune vegetation, the following will be required: • Access roads will be unpaved. • Access roads will be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation.	Yes	No	Partial	Yes	No	Partial
	X					X
				None of the alternatives would completely avoid the sand dunes. All alternatives would have unavoidable impacts to sand deposits, and not just for the transmission component of the Project. Section 2.3.4.3 discusses the access roads, which would be unpaved. However, the description of the access roads does not specify that they will be at-grade, and there is no mitigation measure requiring that they be at-grade.		
DFA-VPL-BIO-DUNE-2: Within Aeolian corridors that transport sand to dune formations and vegetation types downwind inside and outside of the DFAs, all activities will be designed and operated to facilitate the flow of sand across activity sites, and avoid the trapping or diverting of sand from the Aeolian corridor. Buildings and structures within the site will take into account the direction of sand flow and, to the extent feasible, build and align structures to allow sand to flow through the site unimpeded. Fences will be designed to allow sand to flow through and not be trapped.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is located within the mapped Dune/Sand area on DRECP Figure D-15, which is also shown on Figure 3.3-2 of the EIS/EIR. Appendix D of DRECP does not provide a specific definition of whether that specific corridor is one that transports "sand to dune formations and vegetation types downwind inside and outside of the DFAs". The analysis in Section 3.3.1.1 shows that the sand dunes on the Project area do not transport sand to dunes or habitat downwind (east) of the Project site.					
DFA-VPL-BIO-IFS-1: To the maximum extent practicable (see Glossary of Terms), activities will be sited in previously disturbed areas, areas of low quality habitat, and areas with low habitat intactness in desert tortoise linkages and the Ord-Rodman TCA, identified in Appendix D.	Yes	No	Partial	Yes	No	Partial
	X			X		
				As discussed in Section 3.4.1.1, the Project is sited in an area of low quality habitat.		
DFA-VPL-BIO-IFS-2: Within the Mohave ground squirrel range configure solar panel and wind turbine arrays to allow areas of native vegetation that will facilitate Mohave ground squirrel movement through the project site. This may include raised and/or rotating solar panels or open space between rows of panels or turbines. Fences surrounding sites should be permeable for Mohave ground squirrels.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
DFA-VPL-BIO-BAT-1: Wind projects will not be sited within 0.5 mile of any occupied or presumed occupied maternity roost.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not a wind project.					
DFA-VPL-BIO-FIRE-1: Implement the following standard practice for fire prevention/protection: • Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction-related activities. At a minimum these actions will include designating site fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the construction site.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Project's fire prevention actions are discussed in Section 4.21.3.1.		
DFA-VPL-BIO-COMP-1: Impacts to biological resources from all activities in DFAs and VPLs will be compensated using the same ratios and strategies as LUPA-BIO-COMP-1 through 4, with the exception identified below in DFA-VPL-BIO-COMP-2.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure VEG-9D specifies compensatory mitigation requirements for state and Federally protected plant species, if necessary. Mitigation Measure VEG-10 specifies compensatory mitigation for riparian areas and state waters. Mitigation Measure WIL-4 specifies compensatory mitigation requirements for desert tortoise. Mitigation Measure WIL-9.3 specifies compensatory mitigation requirements for burrowing owl. Mitigation Measure WIL-10 specifies compensatory mitigation requirements for Mojave fringe-toed lizard.		
DFA-VPL-BIO-COMP-2: Exception to the biological resources standard compensation ratio of 1:1 - desert tortoise intact linkage habitat compensation ratio of 2:1 applies to the identified modeled intact linkage habitat (Appendix D) in two linkages—Ord-Rodman critical habitat unit to Joshua Tree National Park, and Fremont-Kramer critical habitat unit to the Ord-Rodman critical habitat unit, as identified in Appendix D. Maintenance and enhancement of the function of these two linkages is essential to the function of the Ord-Rodman critical habitat unit.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not located in any of the referenced linkages or critical habitat units.					
DFA-VPL-CTTM-1: Avoid Tier 1, Tier 2, Tier 3 roads/primitive roads/trails, Backcountry Byways, and other significant linear features (as defined in the LUPA-wide CMAs). If avoidance is not practicable, relocate access to the same or higher standard and maintain the recreation setting characteristics and access to recreation activities, facilities, and destination.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The Project would eliminate access to Tier 2 and 3 routes within the Project boundaries. The Applicant has identified alternative access routes, and Mitigation Measure REC-1 specifies measures to ensure that this access remains open.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
DFA-VPL-CTTM-2: If residual impacts to Tier 1 and Tier 2 roads/primitive roads/trails, Backcountry Byways, or other significant linear features cannot be protected and maintained, commensurate compensation in the form of an enhanced recreation operations, recreation facilities or opportunities will be required.	X			X		
				The Project would eliminate access to Tier 2 routes within the Project boundaries. The Applicant has identified alternative access routes, and Mitigation Measure REC-1 specifies compensation in the form of signage and provision of a kiosk.		
DFA-VPL-CUL-1: For renewable energy activities and transmission, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism: • All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity. • All appropriate costs associated with preliminary sensitivity analysis. • All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process. • All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.	Yes	No	Partial	Yes	No	Partial
		X				
	BLM will address costs and fees associated with cultural resources through the Section 106 process.					
DFA-VPL-CUL-2: Consistent and in compliance with the NHPA Programmatic Agreement, signed February 5, 2016, or the most up to date signed version -for renewable energy activities and transmission, a compensatory mitigation fee will be required within the LUPA Decision Area to address cumulative and some indirect adverse effects to historic properties. The mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the project. Refer to the Programmatic Agreement for details regarding the mitigation fee.	Yes	No	Partial	Yes	No	Partial
		X				
	BLM will address costs and fees associated with cultural resources through the Section 106 process.					
DFA-VPL-CUL-3: For renewable energy activities and transmission, the management fee rate will be determined through the NHPA programmatic Section 106 consultation process that will be completed as part of the DRECP land use plan amendment.	Yes	No	Partial	Yes	No	Partial
		X				
	BLM will address costs and fees associated with cultural resources through the Section 106 process.					
DFA-VPL-CUL-4: For renewable energy activities and transmission, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.5 discusses how the footprints of alternatives were developed specifically to avoid cultural resources. All surveys were conducted in accordance with protocols in place at the time of the NOI, under the direction of BLM cultural staff assigned to the Project.		
DFA-VPL-CUL-5: For renewable energy activities and transmission, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 3.5.1.6.6 discusses the protocols used for the field inventory investigations.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
DFA-VPL-CUL-6: For renewable energy activities and transmission, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.	Yes	No	Partial	Yes	No	Partial
	X			X		
				The POD and Chapter 1of the EIS/EIR identity the Purpose and Need of the project, which provides the justification.		
DFA-VPL-CUL-7: For renewable energy activities and transmission, complete the NHPA Section 106 Process as specified in 36 CFR Part 800, or via an alternate procedure, allowed for under 36 CFR Part 800.14 prior to issuing a ROD or ROW grant on any utility-scale renewable energy or transmission project. For utility-scale solar energy developments, the BLM may follow the Solar Programmatic Agreement.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.5.3.1 evaluates the Project with respect to the NHPA Section 106 Process.		
DFA-VPL-LIVE-1: Avoid siting solar developments in active livestock grazing allotments. If a ROW is granted for solar development in an active livestock grazing allotment, prior to solar projects being constructed in active livestock allotments, an agreement must be reached with the grazing permittee/lessee on the 2-year notification requirements. If any rangeland improvements such as, but not limited to, fences, corrals, or water storage projects, are to be impacted by energy projects, reach agreement with the BLM and the grazing permittee/lessee on moving or replacing the range improvement. This may include the costs for NEPA, clearances, and materials.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not within a grazing allotment, as shown on DRECP Figure D-21.					
DFA-VPL-LIVE-2: In California Condor use areas, wind energy ROWs will include a term and condition requiring the permittee and wind operator to eliminate grazing of livestock.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not a wind project, and is not in a condor use area.					
DFA-VPL-LIVE-3: Include no surface occupancy stipulation on geothermal leases in active grazing allotments.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not within a grazing allotment, as shown on DRECP Figure D-21.					
DFA-VPL-VEG-1: Vegetative Use Authorizations: Commercial collection of seed in DFAs and VPLs is an allowable use. CMA's within these areas apply to this kind of activity.	Yes	No	Partial	Yes	No	Partial
		X				
	Project does not include commercial collection of seeds.					
DFA-VPL-VRM-1: Encourage development in a planned fashion within DFAs (e.g., similar to the planned unit development concept used for urban design—i.e., in-fill vs. scattered development, use of common road networks, Generator Tie Lines etc., use of similar support facility designs materials and colors etc.) to avoid industrial sprawl.	Yes	No	Partial	Yes	No	Partial
	X			X		
				As discussed in Sections 2.3.3, the Project uses existing roadways and transmission corridors.		
DFA-VPL-VRM-2: Development in DFAs and VPLs are required to incorporate visual design standards and include the best available, most recent BMPs, as determined by BLM (e.g. Solar, Wind, West Wide Energy Corridor, and Geothermal PEISs, the "*Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*", and other programmatic BMP documents).	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure VIS-1 describes design elements, including structure and color requirements, which will be required to reduce visual impacts. This measure references the requirements of the "*Best Management Practices*" document.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
	Yes	No	Partial	Yes	No	Partial
DFA-VPL-VRM-3: Required Visual Resource BMPs. All development within the DFAs and VPLs will abide by the BMPs addressed in the most recent version of the document "*Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*", or its replacement, including, but not limited to the following: • Transmission: • Color-treat monopoles Shadow Gray per the BLM Environmental Color Chart CC001 unless a more effective color choice is selected by the local Field Office VRM specialist. • Lattice towers and conductors will have non-specular qualities. • Lattice Towers will be located a minimum of 3/4 miles away from Key Observation Points such as roads, scenic overlooks, trails, campgrounds, navigable rivers and other areas people tend to congregate and located against a landscape backdrop when topography allows. • Solar – Color treat all facilities Shadow Gray from the BLM Environmental Color Chart CC001 unless a more effective color is selected by the Field Office VRM specialist, including but not limited to: • Concentrated solar thermal parabolic trough panel backs • Solar power tower heliostats • Solar power towers • Cooling towers • Power blocks • Wind – Color treat all facilities Shadow Gray with the exception of the wind turbine and towers 200 vertical feet or more. • Night Sky – BMPs to minimize impacts to night sky including light shielding will be employed.	X			X		
				Applicant-Proposed Measures described in Section 4.19.2 address BMPs to minimize lighting impacts. Mitigation Measure VIS-1 describes design elements, including structure and color requirements, as well as additional lighting requirements, which will be required to reduce visual impacts. This measure references the requirements of the "*Best Management Practices*" document.		
DFA-RE-1: In order to use the DRECP's BLM LUPA streamlined process for renewable energy in DFAs and transmission, project proponents must first consult with appropriate representatives of the Department of Defense to ensure the proposed renewable energy and/or transmission activity will not cause an unacceptable risk to national security. Refer to additional detail in LUPA Section IV.4 and Appendix E. Specifically, the following process will be implemented: • For renewable energy and transmission activities proposed in red areas (see Appendix E), the DRECP BLM LUPA streamlined process will not be available unless a letter is obtained from the Department of Defense Siting Clearinghouse stating that military impacts have been mitigated. • For renewable energy and transmission activities proposed in orange or yellow areas (see Appendix E), the DRECP BLM LUPA streamlined process will be not be available until Department of Defense representatives at the regional level have been consulted and have been provided a minimum of 30 days to assess potential mission impacts. If the regional representatives conclude within the 30 day period that there is a significant possibility that a proposed activity presents an unacceptable risk to national security, the BLM will not streamline the proposed activity process and will require additional environmental analysis regarding Department of Defense impacts, unless a letter is obtained from the Department of Defense Siting Clearinghouse stating that military impacts have been mitigated.	Yes	No	Partial	Yes	No	Partial
		X				
	DRECP Appendix E states that the only renewable technologies which present a significant mission compatibility issue with DoD operations in this region are wind and solar power tower.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
DFA-BIO-IFS-1: Conduct the following surveys as applicable in the DFAs as shown in Table 21. • Desert tortoise - Protocol surveys in the desert tortoise habitat areas indicated in Appendix D. • Flat-tailed horned lizard - Protocol surveys as specified in the Rangewide Management Strategy (RMS). • Bendire's thrasher - Pre-construction nesting bird survey during breeding season (March 1 through September 30) in suitable habitat on and within 500 feet of construction zone. • Burrowing owl - Breeding season surveys (February 1 through August 31) per Burrowing Owl Guidelines (CDFG 2012). Clearance surveys (for direct take avoidance) no less than 14 days prior to ground disturbance per Burrowing Owl Guidelines. • Golden eagle - Pre-project golden eagle surveys and pre-construction risk assessment surveys in **LUPA-BIO-IFS-28**, if applicable as described in golden eagle CMAs below. • Swainson's hawk - Protocol surveys in the Antelope and Owens Valleys. • Mohave ground squirrel - Clearance surveys in the Mohave ground squirrel habitat areas indicated in Appendix D. Protocol surveys in key population centers and linkages as identified on the map in Appendix D	Yes	No	Partial	Yes	No	Partial
			X	X		
	• Applicable for Desert tortoise, Bendire's thrasher, Burrowing owl, and Golden eagle. • Not applicable for Swainson's hawk, as Project is not located in Antelope or Owens Valleys. • Not applicable for Flat-tailed horned lizard or Mohave ground squirrel, because Project is not within the range of these species.			• Desert Tortoise – conforms. Protocol surveys were performed, as discussed in Section 3.4.1.1, even though DRECP Appendix D-17 only requires clearance surveys. • Bendire's thrasher – conforms. Table 3.4-1 lists the species as Low Potential, with nesting habitat present. Mitigation Measure WIL-7 specifies requirements for pre-construction surveys, with dates of March 1 through September 30. • Burrowing owl – conforms. Mitigation measure WIL-9 specifies requirements for pre-construction surveys no more than 30 days, and no less than 14 days, in advance. • Golden eagle – conforms. Section 3.4.1.1 describes the pre-project golden eagle surveys.		
DFA-BIO-IFS-2: Implement the following setbacks shown below in Table 22 as applicable in the DFAs. • Bendire's thrasher - Setback pre-construction, construction, and decommissioning, and other activities 500 feet from active nests. • Burrowing owl - 656 feet (200 meters) from active nesting sites. • California condor - Setback wind and transmission projects 5 miles from nest sites. Setback solar, geothermal, and other activities than may impact condors 1.5 miles from nest sites and out of direct line of site from nest sites. • Gila woodpecker - Setback pre-construction, construction, and decommissioning, and other activities that may impact the species 0.25 mile from suitable habitat during the breeding season (April 1 through July 31). • Golden eagle - Setback activities 1 mile from active or alternative nests within an active territory as described in **LUPA-BIO-IFS-24**. • Swainson's hawk - 0.5 mile from active nests.	Yes	No	Partial	Yes	No	Partial
			X	X		
	• Applicable for Bendire's thrasher, Burrowing owl, Golden eagle, and Swainson's hawk. • Not applicable for California condor or Gila woodpecker, because Project is not within the range of these species.			• Bendire's thrasher – conforms. Mitigation measure WIL-7 specifies that the Qualified Biologist shall determine the size of the buffer zone. • Burrowing owl – conforms. Mitigation measure WIL-9 specifies a setback of 656 feet from active nests. • Golden eagle – conforms. The EIS/EIR reports that surveys identified no nests within 1 mile. • Swainson's hawk – conforms. Mitigation measure WIL-7 specifies that the Qualified Biologist shall determine the size of the buffer zone.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
DFA-BIO-IFS-3: Protocol surveys, as described in **DFA-BIO-IFS-1** and shown in Table 21, are required for development in the desert tortoise survey areas (see Appendix D). Based on the results of the protocol surveys the identified desert tortoises will be translocated, or the activity will be redesigned/relocated as described below: • If protocol surveys identify 35 or fewer desert tortoises in potential impact areas on an activity site, the USFWS and CDFW (for third party activities) will be contacted and provided with the protocol survey results and information necessary for the translocation of identified desert tortoises. Pre-construction and construction, and other activities will not begin until the clearance surveys for the site have been completed and the desert tortoises have been translocated. Translocation will be conducted in coordination with the USFWS and CDFW, as appropriate, per the protocols in the Desert Tortoise Field Manual (USFWS 2009) and the most up-to-date USFWS protocol. • If protocol surveys identify an adult desert tortoise density (i.e., individuals 160 millimeters or more) of more than 5 per square mile or more than 35 individuals total on a project site, the project will be required to be redesigned, re-sited, or relocated to avoid and minimize the impacts of the activity on desert tortoise.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Protocol surveys were performed, as discussed in Section 3.4.1.1, even though DRECP Appendix D-17 only requires clearance surveys.		
DFA-BIO-IFS-4: The DFA in the "North of Edwards" Mohave ground squirrel key population center is closed to renewable energy applications and any activity that is likely to result in the mortality (killing) of a Mohave ground squirrel until Kern and San Bernardino counties complete county General Plan amendments/updates that include renewable energy development and Mohave ground squirrel conservation on nonfederal land in the West Mojave ecoregion and the CDFW releases a final Mohave Ground Squirrel Conservation Strategy, or for a period of 5 years after the signing of the DRECP LUPA ROD, whichever comes first. If Kern and San Bernardino counties and CDFW do not complete their respective plans within the 5-year period, prior to opening the DFA to renewable energy applications and other impacting activities, BLM will assess new Mohave ground squirrel information, in coordination with the CDFW, to determine if modifications to the DFA or CMAs are warranted based on new Mohave ground squirrel information.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					
DFA-BIO-IFS-5: Once the planning criteria in CMA DFA-BIO-IFS-4, are met, the DFA in the "North of Edwards" Mohave ground squirrel key population center will be reevaluated. If Kern and San Bernardino counties receive Mohave ground squirrel take authorizations from the CDFW through completed Natural Community Conservation Plans or county-wide conservation strategies that address Mohave ground squirrel conservation at a landscape level and include renewable energy development areas on nonfederal land in the West Mojave ecoregion, the "North of Edwards" key population center DFA will be eliminated and the management changed to General Public Lands, as part of adaptive management.	Yes	No	Partial	Yes	No	Partial
		X				
	Mohave ground squirrel habitat is not present in the Project area, per DRECP Figure D-18.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
DFA-BIO-PLANT-1: Impact to suitable habitat (see Glossary of Terms) for the following plant Focus Species within the DRECP Plan Area will be capped (see "DFA Suitable Habitat Impacts Cap" in the Glossary of Terms) in the DFAs as described below and in Table 23.The suitable habitat impact cap for these plant species is to be measured in DFAs as a group, not individually. Triple-ribbed milk-vetch is an avoidance species in DFAs, therefore none of its suitable habitat is to be impacted. • Alkali mariposa lily - 10% • Barstow wooly sunflower – 20% • Desert cymopterus – 20% • Little San Bernardino Mountains linanthus – 20% • Mojave monkeyflower – 20% • Mojave tarplant – 20% • Owens Valley checkerbloom – 20% • Parish's daisy – 20%	Yes	No	Partial	Yes	No	Partial
		X				
	None of the referenced species are present in the Project area.					
DFA-REC-1: Retain, to the extent possible, the identified recreation setting characteristics: physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls (see recreation setting characteristics matrix).	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.14.3.1 evaluates the impact of the Project on the recreation setting, and proposes mitigation to minimize impacts.		
DFA-REC-2: Avoid large-scale ground disturbance within one-half mile of Level 3 Recreation facility footprint including route access and staging areas. If avoidance isn't practicable, the facility must be relocated to the same or higher standard and maintain recreation objectives and setting characteristics.	Yes	No	Partial	Yes	No	Partial
		X				
	There are no Level 3 recreation facilities within one-half mile.					
DFA-REC-3: SRMAs are exclusion areas for renewable energy development due to the incompatibility with the values of SRMAs. Two exceptions to this management action are: 1. geothermal development is an allowable use in the few instances in Imperial County where a geothermal-only DFA overlays the SRMA designation and the lease includes a "no surface occupancy" stipulation, with exception of three specific parcels in the Ocotillo Wells SRMA (the Special Unit Management Plan in Appendix C) 2. the VPL at Antimony Flat in Kern County overlaying the SRMA, renewable energy may be allowed on a case-by-case basis if the proposed project is found to be compatible with the specific SRMA values.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not located in a SRMA.					
DFA-REC-4: When considering large-scale development in DFAs, retain to the extent possible existing, approved recreation activities.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 4.14.3.1 evaluates the impact of the Project on recreational use of the site, and proposes mitigation to minimize impacts.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
DFA-REC-5: For displacement of dispersed recreation opportunities, commensurate compensation in the form of enhanced recreation operations, recreation facilities or opportunities will be required. If recreation displacement results in resource damage due to increased use in other areas, mitigate that damage through whatever measures are most appropriate as determined by the Authorized Officer.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Mitigation Measure REC-1 specifies compensation for impacts to dispersed recreation. BLM needs to review and approve that mitigation measure.		
DFA-REC-6: Where activities in DFAs displace authorized facilities, similar new recreation facilities/campgrounds (including but not limited to the installation of new structures including pit toilets, shade structures, picnic tables, installing interpretive panels, etc.), will be provided.	Yes	No	Partial	Yes	No	Partial
		X				
	Project would not displace authorized facilities.					
DFA-REC-7: If designated vehicle routes are directly impacted by activities (includes modification of existing route to accommodate industrial equipment, restricted access or full closure of designated route, pull outs, and staging area's to the public, etc.), mitigation will include the development of alternative routes to allow for continued vehicular access with proper signage, with a similar recreation experience. In addition, mitigation will also include the construction of an "OHV touring route" which circumvents the activity area and allows for interpretive signing materials to be placed at strategic locations along the new touring route, if determined to be appropriate by BLM.	Yes	No	Partial	Yes	No	Partial
	X			X		
				Section 3.14.1.3 discusses how access to nearby recreation areas is to be maintained, Mitigation Measure REC-1 specifies compensation for impacts to dispersed recreation, and Mitigation Measure REC-2 specifies requirements for signage directing users to alternative routes.		
DFA-REC-8: Impacts from activities in a DFA to Special Recreation Permit activities will be mitigated by providing necessary planning and NEPA compliance documentation for Special Recreation Permit replacement activities, as determined appropriate on a case-by case basis.	Yes	No	Partial	Yes	No	Partial
		X				
	There are no known Special Recreation Permit activities that would be affected by the Project.					
DFA-REC-9: If residual impacts to SRMAs occur from activity impacts in a DFA, commensurate mitigation through relocation or replacement of facilities or compensation (in the form of a recreation operations and enhancement fund) will be required.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not located in a SRMA.					
DFA-REC-10: Within ERMAs, impacts from development projects that do not enhance conservation or recreation goals will require commensurate mitigation through relocation or replacement of facilities.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not located in an ERMA.					
DFA-LANDS-1: Lands within DFAs are available for disposal.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (land transaction) which is not related to authorization of the Project.					
DFA-LANDS-2: Development of acquired lands within DFAs is allowed, at the discretion of the BLM California State Director, unless development is incompatible with the purposes of the acquisition and any applicable deed restrictions.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project site is not acquired lands.					

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
DFA-LANDS-3: Lands proposed for exchange in DFAs will be segregated from the public land laws for 5 years, but wind, solar, geothermal and transmission applications and their associated facilities are allowed.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (land exchange) which is not related to authorization of the Project.					
DFA-LANDS-4: Review withdrawn lands in DFAs upon receipt of a ROW application and if appropriate modify to allow for issuance of ROW grants.	Yes	No	Partial	Yes	No	Partial
		X				
	The Project area does not involve withdrawn lands.					
DFA-LANDS-5: Cost recovery funding used to process a ROW application may be used to adjudicate and remedy any conflicting land withdrawals, if necessary.	Yes	No	Partial	Yes	No	Partial
		X				
	Project is not known to require any land withdrawals.					
DFA-LANDS-6: Make public lands in DFAs available for selection by the CSLC in lieu of base lands within DFAs. Base lands are School Lands the State of California was entitled to but did not receive title to due to prior existing encumbrances.	Yes	No	Partial	Yes	No	Partial
		X				
	The CMA refers to an internal BLM activity or action (land exchange) which is not related to authorization of the Project.					
DFA-LANDS-7: Transmission facilities are an allowable use and will not require a plan amendment within DFAs.	Yes	No	Partial	Yes	No	Partial
		X				
	Desert Quartzite follows the land use planning decision in the CDCA amended by the NECO plan.					
DFA-VRM-1: Manage all DFAs as VRM Class IV to allow for industrial scale development. Employ best management practices to reduce visual contrast of facilities.	Yes	No	Partial	Yes	No	Partial
		X				
	Desert Quartzite follows the land use planning decision in the CDCA amended by the NECO plan.					
DFA-VRM-2: Regional mitigation for visual impacts is required in DFAs. Mitigation is be based on the VRI class and the underlying visual values (scenic quality, sensitivity, and distance zone) for the activity area as it stands at the time the ROD is signed for the DRECP LUPA. Compensatory mitigation may take the form of reclamation of other BLM lands to maintain (neutral) or enhance (beneficial) visual values on VRI Class II and III lands. Other considerations may include acquisition of conservation easements to protect and sustain visual quality within the viewshed of BLM lands. The following mitigation ratios will be applied in DFAs: • VRI Class II 1:1 ratio • VRI Class III ½ (0.5) : 1 ratio • VRI Class IV, no mitigation required Additional mitigation will be required where activities affect viewsheds of specially designated areas (e.g., National Scenic and Historic Trails).	Yes	No	Partial	Yes	No	Partial
	X				X	
				Section 3.19.1.6 of the EIS/EIR specifies that the project site was designated as VRI Class II at the time of the DRECP ROD. However, no compensatory mitigation is proposed for visual impacts.		

Table F-1. Evaluation of DRECP CMAs with respect to the Desert Quartzite Solar Project

CMA	Applicability[1,2]			Conformance[3]		
DFA-WHB-1: Incorporate all guidance provided by the Wild Free-Roaming Horses and Burros Act of 1971, its amendments, associated regulations, and any pertinent court rulings into the project/activity proposal, as appropriate.	Yes	No	Partial	Yes	No	Partial
		X				
	As discussed in Section 4.1.4, the Project area does not support wild horses or burros.					
DFA-WHB-2: Development that would reduce burros' access to forage, water, shelter, or space or impede their wild, free-roaming behavior in Herd Management Area is not allowed.	Yes	No	Partial	Yes	No	Partial
		X				
	As discussed in Section 4.1.4, the Project area does not support wild horses or burros.					
DFA-WHB-3: Mitigation can only occur on lands that the animals were found at the passage of the Wild Free-Roaming Horses and Burros Act of 1971. Expansion of the boundaries of a Herd Management Area back into the Herd Areas would require a land use plan amendment, the cost of which would be incurred by the applicant proposing to develop in the Herd Management Area, if part of the proposed mitigation package.	Yes	No	Partial	Yes	No	Partial
		X				
	As discussed in Section 4.1.4, the Project area does not support wild horses or burros.					
DFA-WC-1: Renewable energy activities are allowed in DFAs that have been inventoried and identified as lands with wilderness characteristics.	Yes	No	Partial	Yes	No	Partial
		X				
	Project site is not located in lands with wilderness characteristics.					
DFA-WC-2: For inventoried lands found to have wilderness characteristics in DFAs, compensatory mitigation is required at a 1:1 ratio if wilderness characteristics are directly impacted. This may be accomplished through acquisition and donation, from willing landowners, to the federal government of (a) wilderness inholdings, (b) wilderness edge holdings that have inventoried wilderness characteristics, or (c) other areas within the LUPA Decision Area that are managed to protect wilderness characteristics. Restoration of impaired wilderness characteristics in Wilderness, Wilderness Study Area, and lands managed to protect wilderness characteristics could be substituted for acquisition.	Yes	No	Partial	Yes	No	Partial
		X				
	Project site is not located in lands with wilderness characteristics.					

1 – The applicability was evaluated by considering:

- Is the measure applicable to BLM's authorization of a third-party project, or is it specific to BLM-constructed projects or BLM's management policies?
- Is the site within the geographic area specified in the CMA?
- Are the specific resources addressed by the CMA present at DRECP?
- Is the technology subject to the CMA solar PV?
- Is the land use classification or designation subject to the CMA present at the site, or likely to be impacted by the project?

2 – The assessment of applicability is unrelated to the question of how the requirements of the DRECP apply to Desert Quartzite, which is a grandfathered project which is exempt from DRECP. The assessment is only a look at the environmental setting and impacts of the project, and an assessment of whether the CMA would apply to the Proposed Action and Alternatives 2 and 3 *if* the project were being done under DRECP. "Partial" generally means that the CMA has multiple parts, some of which are applicable to the Project, and some of which are not.

3 – In almost all cases where conformance is marked "Yes", this determination only means that all of the topics raised in the CMA, and their general goals and objectives, are addressed somewhere in the EIS/EIR. However, in 100% of cases, the language in the EIS/EIR does not exactly match the language in the CMA.

4 - Figure 17 in the BRTR shows a feature identified as "Desert Dry Wash woodland (microphyll woodland)". This feature is mapped and discussed in the EIS/EIR as "desert dry wash woodland", but is interpreted to be equivalent to "microphyll woodland" wherever microphyll woodland is specified in a CMA.

APPENDIX F

CDCA PLAN, SECTION 368, AND LOCAL PLAN

APPENDIX F - CDCA PLAN, SECTION 368 AND LOCAL PLAN

F.1. CDCA PLAN CONSISTENCY

The Proposed Action site is within the BLM's California Desert District and within the planning boundaries of the California Desert Conservation Area (CDCA) Plan. The Project site is currently classified as Multiple-Use Class (MUC) Moderate (M) in the CDCA Plan. As discussed in Section 2.2.3, the Western Solar Plan and ROD recognize the DQSP as a "pending" right-of-way (ROW) application (Western Solar Plan Section 9.4.22.2, p. 9.4-133). Pending applications like the Desert Quartzite Solar Project (DQSP) are not subject to the Western Solar Plan (Western Solar Plan ROD Section B.1.2) or to the CDCA plan amendments (PAs) made in that decision. Therefore, if the BLM elects to approve the ROW grant application for the DQSP, a Project-specific PA to identify the development footprint as suitable for the proposed type of solar energy use would be required. The CDCA Plan would also need to be amended to authorize the portion of the gen-tie corridor which is located outside of BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52.

The process for considering amendments to BLM land use plans is described in the agency's *Land Use Planning Handbook* (BLM 2005). The general process for amending a BLM Land Use Plan is as follows:

1. The plan amendment process would be completed in compliance with FLPMA, NEPA, and all other relevant Federal law, executive orders, and BLM management policies.
2. The plan amendment process would include an EIS to comply with NEPA.
3. Where existing planning decisions remain valid, those decisions may remain unchanged and would be incorporated into the new plan amendment.
4. The plan amendment would recognize valid existing rights.
5. Native American tribal consultations would be conducted in accordance with policy, and tribal concerns would be given due consideration.
6. Consultation with other agencies with jurisdiction would be conducted throughout the plan amendment process.

The PA process is outlined in Chapter 7 of the CDCA Plan. The amendment would be a Category 3 amendment, because it requests a specific use or activity, which is not currently authorized by an existing plan element. In analyzing an applicant's request for amending or changing the CDCA Plan, the BLM District Manager will:

1. Determine if the request has been properly submitted and if any law or regulation prohibits granting the requested amendment.
2. Determine if alternative locations within the CDCA are available which would meet the applicant's needs without requiring a change in the Plan's classification, or an amendment to any Plan element.
3. Determine the environmental effects of granting and/or implementing the applicant's request.

4. Consider the economic and social impacts of granting and/or implementing the applicant's request.
5. Provide opportunities for and consideration of public comment on the proposed amendment, including input from the public and from Federal, state, and local government agencies.
6. Evaluate the effect of the proposed amendment on BLM management's desert-wide obligation to achieve and maintain a balance between resource use and resource protection.

Details concerning the proposed PA for the Proposed Action or one of the other action alternatives are provided in Section 2.2.3. This Draft PA/EIS/EIR acts as the mechanism for satisfying NEPA requirements for the PA process, and provides the analysis required to support a PA to identify the proposed site as suitable or unsuitable for solar development within the Plan, and to authorize the portion of the gen-tie corridor which is located outside of BLM's Utility Corridor K and Section 368 Federal Energy Corridor 30-52.

As analyzed above, all of the BLM-administered lands proposed for use by the Project and alternatives are classified in the CDCA Plan as Class M. MUC designations govern the type and degree of land uses allowed within the classification area. All land use actions and resource-management activities on BLM-administered lands within a MUC delineation must meet the guidelines for that class. These guidelines are provided in Table 1, Multiple-Use Class Guidelines, of the CDCA Plan.

The MUC-M designation allows electric generation plants for solar facilities to be developed in accordance with Federal, state, and local regulations after NEPA requirements are met. The specific application of the MUC designations and resource management guidelines for a specific resource or activity are further discussed in the plan elements section of the CDCA Plan. MUC-M designations are based upon a controlled balance between higher intensity use and protection of public lands. This class provides for a wide variety or present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Class M management is also designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause.

For purposes of this discussion, the terminology "Proposed Action and Alternatives" is used herein since the classification of the BLM-administered portion of the site of the Proposed Action and Alternatives 2 and 3 would be the same (MUC-M).

F.1.1 Agriculture

Agricultural uses of MUC-M lands are not allowed, with the exception of livestock grazing. The BLM lands associated with the Project are not currently used for agriculture, and the Project would not involve use of the site for agriculture.

F.1.2 Air Quality

MUC-M lands are to be managed to protect air quality and visibility in accordance with Class II objectives of Title I, Part C of the CAA as amended. The anticipated maximum annual and daily construction emissions that would be associated with the Proposed Action and Alternatives are provided in Tables 4.2-2 and 4.2-3 in Section 4.2, *Air Resources*. The analysis indicates that the

annual emissions for all pollutants would be below the respective *de minimis* levels (below 100 tons/year), except for PM_{10}, which would exceed the *de minimis* level. The projected exceedance of the PM_{10} MDAQMD emissions threshold would also contribute to the non-attainment for PM_{10} in the area under CAAQS. The emission estimates in Table 4.2-4 show that emissions from operation of the Project would all be below MDAQMD thresholds and *de minimis* levels. Impacts associated with operation and maintenance of the Project would not be expected to result in or contribute to an exceedance of a NAAQS or CAAQS. The magnitude of the impacts of decommissioning emissions are expected to be significantly less than those estimated for Project construction, since decommissioning would occur after at least 30 years of operation, and it is expected that on-road and off-road equipment engine technology would be far more advanced and cleaner than is currently the case. Therefore, the Project would conform to the CAA Class II objectives referenced in the CDCA Plan MUC guidelines.

F.1.3 Water Quality

The CDCA Plan states that MUC-M lands are to be managed "to minimize degradation of water resources". Best Management Practices will be used to keep impacts on water quality minimal, and to comply with Executive Order 12088, both of which address Federal compliance with pollution control standards (BLM 1980, p. 15). The BMPs that are relevant to the Project would be applied during implementation of Appendix G, Mitigation Measures WATER-1, WATER-2, and WATER-4. With implementation of these surface and groundwater quality BMPs, impacts to water resources and water quality would be minimal, and the Project would conform to the CDCA Plan guidelines for MUC-M lands.

F.1.4 Cultural and Paleontological Resources

Cultural and paleontological resources are to be preserved and protected within MUC-M lands, and procedures described in 36 CFR 800 are to be observed where applicable. As described in detail in Sections 4.5, *Cultural Resources*, and 4.13, *Paleontological Resources*, impacts on cultural and paleontological resources resulting from the construction, operation and maintenance, and decommissioning of the Project would be mitigated and would conform to the MUC Guidelines. Adverse effects on cultural resources listed in or determined eligible for the NRHP would be resolved in accordance with a MOA being prepared for the Project in consultation with the California SHPO, Indian tribes, and other interested parties in accordance with NHPA §106.

F.1.5 Native American Values

Under the MUC-M Guidelines, Native American cultural and religious values are to be protected and preserved, and the appropriate Indian tribes are to be consulted. Consultation with Indian tribes was initiated during planning phase of the Project and will continue during the NEPA process (Section 4.5, *Cultural Resources*, and Chapter 6, *Consultation, Coordination, and Public Involvement*, describe the Native American consultation processes). Opportunities have been provided to allow Indian tribes to identify places and resources of importance to them and to express concerns regarding cultural and religious values that could be affected by the Project.

Adverse effects on any places of traditional cultural or religious importance that are identified by tribes would be resolved in accordance with the MOA being developed for the Project with tribal participation. Potential impacts to and protection of cultural resources are discussed in more

detail in Section 4.5, *Cultural Resources*. Collectively, these measures ensure that preservation and protection of Native American cultural and religious values associated with cultural resources is accomplished in accordance with the CDCA Plan MUC-M Guidelines.

F.1.6 Electrical Generation Facilities

Solar generation may be allowed on MUC-M lands after NEPA requirements are met. This Draft PA/EIS/EIR represents the mechanism for complying with the NEPA requirements.

F.1.7 Transmission Facilities

MUC-M guidelines allow electric transmission to occur in designated ROW corridors. The gen-tie line associated with the Proposed Action would be sited almost entirely within BLM's Utility Corridor K/30-52. Because the CRSS is sited approximately 1,500 feet south of the southern boundary of Corridor K/30-52, the portion of the gen-tie corridor between Corridor K/30-52 and the CRSS would be located outside of the utility corridor. In addition, under Alternatives 2 and 3, a short segment of the gen-tie line extending north from the On-Site Substation to the corridor would be located outside of the corridor. The CDCA Plan requires that all sites associated with power generation or transmission not identified in the Plan be considered through the PA process. Therefore, the BLM would undertake a Project-specific CDCA PA along with the ROW grant for the Project. Upon BLM's amendment of the CDCA plan for the Project, the Project would be fully compliant with the CDCA Plan. This Draft PA/EIS/EIR acts as the mechanism for meeting NEPA requirements, and also provides the analysis required to support a PA identifying the facility within the Plan.

F.1.8 Communication Sites

Communication sites may be allowed on MUC-M lands after NEPA requirements are met. The Project would not involve installation of communications sites, and therefore would not be affected by the MUC-M guidelines for this land use activity.

F.1.9 Fire Management

The Project site is located in a Federal Responsibility Area (FRA) under the jurisdiction of BLM, and the site is within a moderate Fire Hazard Severity Zone (FHSZ). As part of the Project, the Applicant would implement the fire prevention and suppression measures described in Section 2.3.7.3. Additionally, as described in Appendix G, *Wildland Fire*, Mitigation Measure FIRE-1 requires the Applicant to prepare and implement a Fire Safety Plan to ensure the safety of workers and the public during Project construction, operation and maintenance, and decommissioning activities. This plan shall complement or supplement provisions of the Applicant's proposed Hazardous Materials Management and Emergency Response Plan. The Fire Safety Plan would be provided to the BLM and RCFD for approval before the Applicant receives a Notice to Proceed (NTP). Should a fire occur in the area that is not specific to the facility, it would be addressed by BLM or RCFD, not by the Applicant, and it would be addressed in conformance with the Fire Safety Plan and, therefore, would conform to the MUC guidelines for Fire Management for Class M lands.

F.1.10 Vegetation

Table 1 of the CDCA Plan includes a variety of guidelines associated with vegetation as follows:

Vegetation Harvesting

Native Plants

Commercial or non-commercial removal of native plants in MUC-M areas may be allowed only by permit after NEPA requirements are met, and after development of necessary stipulation. Approval of a ROW grant for the Project would constitute the permit for such removal. The conditions of approval that would be required in a Record of Decision would constitute the stipulations to avoid or minimize impacts from removal of native plants.

Harvesting by Mechanical Means

Harvesting by mechanical means may be allowed by permit only. Although the Project may include the collection of seeds to assist with reclamation, the removal of these items would not be done for distribution to the public. Also, the guidelines for vegetation harvesting include encouragement of such harvesting in areas where the vegetation would be destroyed by other actions, which would be the case with the Project. Therefore, the Project would be in conformance with this MUC guideline.

Rare, Threatened, and Endangered Species, State and Federal

In all MUC areas, all Federal and state-listed species are to be fully protected. In addition, actions that may jeopardize the continued existence of Federally-listed species require consultation with the USFWS. As evaluated in Section 4.3, *Biological Resources – Vegetation*, no Federal or state-listed plants would be affected by the Project.

Sensitive Plant Species

Identified sensitive plant species would be given protection in management decisions consistent with BLM's policy for sensitive species management, BLM Manual 6840 (BLM 2008). The objective of this policy is to conserve and/or recover listed species, and to initiate conservation measures to reduce or eliminate threats to BLM sensitive species to minimize the likelihood of and need for listing. Six special-status plants were identified on the Project site, of which one, Harwood's eriastrum (*Eriastrum harwoodii*), is considered a BLM-sensitive plant. Impacts and mitigation measures associated with this species and other special-status plant species are discussed in Section 4.3, *Biological Resources - Vegetation*. Mitigation measures included in this Draft PA/EIS/EIR would reduce the number of individuals of the species that would be affected. Because these measures are intended to reduce threats to these species to minimize the likelihood of listing, these measures are in conformance with the MUC guidance in the CDCA Plan.

Unusual Plant Assemblages

No unusual plant assemblages are designated on the Project site.

Vegetation Manipulation

Mechanical Control

Mechanical control may be allowed on MUC-M lands after consideration of possible impacts. Vegetation manipulation is defined in the CDCA Plan as removing noxious or poisonous plants from rangelands; increasing forage production; creating open areas within dense brush communities to favor certain wildlife species; or eliminating introduced plant species.

During construction, operations, and decommissioning phases, the Applicant would abide by noxious weed control procedures as developed in cooperation with the BLM. The establishment of noxious/invasive vegetation can be limited by early detection and eradication. The Applicant would finalize the site-specific VRMP, described in Section 2.3.7.2, *Vegetation Management*, prior to a ROW grant being issued. Such actions would be conducted as part of the Project. Vegetation management under the VRMP would conform to Federal, state, and local regulations.

Chemical Control

Aerial broadcasting application of chemical controls is not allowed on MUC-M lands. Noxious weed eradication may be allowed after site-specific planning. The Project would not include aerial broadcasting. As described in Section 2.3.7.2, *Vegetation Management*, the VRMP would include an Integrated Weed Management Plan to control invasive and exotic weeds.

Exclosures

Exclosures may be allowed on MUC-M lands. Exclosure is a manipulation technique where livestock and certain wildlife species can be excluded from fenced areas. This procedure provides comparison data and is valuable in the determination of grazing effects of vegetation. The Project would not include exclosures.

Prescribed Burning

Prescribed burning may be allowed on MUC-M lands after development of a site-specific management plan. The Project would not include prescribed burning.

F.1.11 Land Tenure Adjustment

MUC-M land may be sold in accordance with FLPMA and other applicable Federal laws and regulations. The Project would not involve the sale of any BLM-administered lands.

F.1.12 Livestock Grazing

Livestock grazing is allowed on MUC-M lands subject to the protection of sensitive resources. The Project would not involve livestock grazing.

F.1.13 Minerals

The Project would not involve the development of minerals on MUC-M lands.

F.1.14 Motorized Vehicle Access/Transportation

Pursuant to the CDCA MUC guidelines for MUC-M areas, new roads and routes may be developed under ROW grants or approved plans of operation, and periodic or seasonal closures or limitations of routes of travel may be required. When construction begins, the Project area will be fenced off and thus several open OHV routes will be closed to public use for the duration of the ROW. These routes include all or portions of routes 660862, 660863, 660866, 661092, 661102, and 661501. Three of these routes provide access to the private property inholding (660862, 660866, and 661501) within the Project area and three routes provide access to the Mule Mountains (660863, 661092, and 661102). Operation and maintenance of the Project would result in long-term closures of portions of these OHV routes as described in Section 4.14, *Recreation and Public Access*. With the closure of the three routes that access the Mule Mountains, alternative access to the Mule Mountains would occur by traveling west on 22nd Avenue to Gravel Pit Road, southwest along Gravel Pit Road, and then west on an unpaved extension of 24th Avenue to BLM Routes 660863 and 661093.

F.1.15 Recreation

The Project would not involve use of the Project site for recreational uses.

F.1.16 Waste Disposal

The Project would not involve the development of waste disposal sites.

F.1.17 Wildlife Species and Habitat

Table 1 of the CDCA Plan includes a variety of guidelines associated with wildlife as follows:

Rare, Threatened, and Endangered Species, State and Federal

In all MUC areas, all state and Federally listed species and their critical habitat are to be fully protected. In addition, actions that may impact or jeopardize the continued existence of Federally listed species require consultation with the USFWS in accordance with FESA §7. As evaluated in Section 4.4, *Biological Resources - Wildlife*, the Mojave desert tortoise is the only Federally listed species potentially affected by the Project. The only state listed species potentially affected by the Project is the Swainson's hawk. Mitigation Measures developed as part of the Project would avoid, minimize, and/or compensate for potential effects to these species.

As specified in the guideline, BLM will initiate formal consultation with the USFWS in accordance with FESA §7. BLM has worked with USFWS, CDFW, and the Applicant to develop protection and compensation measures for the Mojave desert tortoise. Therefore, the Project would comply with the guideline to provide full protection to the species.

Sensitive Species

On MUC-M lands, identified species are to be given protection in management decisions consistent with BLM's policy for sensitive species management, BLM Manual 6840. The objective of this policy is to conserve and/or recover listed species, and to initiate conservation measures to reduce or eliminate threats to BLM sensitive species to minimize the likelihood of and need for listing. Several BLM-sensitive wildlife species present or likely to occur on habitat

associated with the Project include, but are not limited to Mojave fringe-toed lizard, burrowing owl, Le Conte's thrasher, Golden Eagles, and migratory birds and bats. Those species that are likely to occur on the Project site would be protected under a number of mitigation measures meant to avoid, minimize, or compensate for impacts from the Project as discussed in detail in Section 4.4, *Biological Resources - Wildlife.*

Predator and Pest Control

Control of depredation wildlife and pests is to be allowed on MUC-M lands in accordance with existing state and Federal laws. As part of the Project, the Applicant would develop a litter control program that would be enforced during construction and operation and maintenance phases to reduce the likelihood that litter would attract predators (e.g., common raven) to the area and consequently increase the likelihood of predation on special status species (e.g., Mojave desert tortoise).

Therefore, this guideline is applicable to these actions but is allowed subject to conformance with state and Federal laws.

Habitat Manipulation

The Project would not include habitat manipulation.

Reintroduction or Introduction of Established Exotic Species

The Project would not include the reintroduction or introduction of exotic species.

F.1.18 Wetland/Riparian Areas

No wetlands or riparian areas are present on the Project site.

F.1.19 Wild Horses and Burros

No wild and free-roaming horses or burros are present on the Project site.

F.2. CONFORMANCE WITH IOPS FOR SECTION 368 CORRIDOR

Appendix B to the ROD for the Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States (BLM 2009) specifies Interagency Operating Procedures (IOPs) to meet the Section 368 requirement to improve the ROW application process and to meet NEPA requirements to provide practicable means to avoid or minimize environmental harm which may result from future ROW grants within the designated corridors. The IOPs specify regulatory compliance, agency coordination, government-to-government consultation, project design, and resource-specific considerations that must be addressed through NEPA analysis of the proposed use of the corridor. The manner in which the Project and the PA/EIS/EIR conforms to the IOPs is presented below in Table F-1.

Table F-1. Conformance with IOPs for Use of Section 368 Corridor

Summary of IOP[1, 2]	Manner of Addressing IOP in the PA/EIS/EIR
Project Planning	
Conduct project-specific NEPA analysis	This PA/EIS/EIR acts as the NEPA analysis for portion of the Project within the Section 368 corridor.
Comply with Section 106 of the NHPA	Compliance with the NHPA is discussed in Sections 3.5.1.6, 4.5.1.1, 4.5.1.2, and 6.3.2.
Consult with USFWS as required by Section 107 of the ESA	Compliance with Section 107 of the ESA is discussed in Sections 3.4.1.1 and 6.3.1.
Notify FAA to identify appropriate aircraft safety requirements.	Notification to and coordination with the FAA and the RCALUC are discussed in Sections 3.9.1.5, 4.9.3, and Appendix G, Mitigation Measure HAZ-3.
Reflect findings, mitigation, and/or standards contained in regional land management plans.	Conformance with the CDCA Plan and Riverside County General Plan are addressed in Appendix F, Section F.1 and F.3.
Initiate and continue government-to-government consultation with affected tribes.	Government-to-government consultation is discussed in Sections 4.5.3.1 and 6.3.3.
Prepare an ethnographic study, if the agency POC determines it is needed, based on tribal consultation.	At this time, the agency has not determined a need for an ethnographic study
Prepare a project-specific Plan of Development	The Applicant's Plan of Development is discussed in Section 1.1 and 2.3.1.
Design project to comply with all appropriate and applicable agency policies and guidance	Applicable agency policies, guidance, and regulations are identified for each resource in Appendix D.
Plan project based on current state of knowledge.	All analysis is based on the most recent, applicable data sources.
Follow best management practices for project siting, construction, and operations.	Best management practices for various resources, including stormwater management, management of hazardous materials, transportation management visual resources management, and vegetation avoidance, are discussed where applicable throughout the document.
Use the corridor efficiently.	As shown in Figure 3.10-2, the placement of the gen-tie line in the corridor has been designed to minimize the intrusion on the corridor. The gen-tie line enters the corridor from the south, travels through the corridor along its southern boundary, and then exits the corridor on the south.
Coordinate with other concurrent projects proposed in the corridor.	Coordination with other operators within the corridor is discussed in Section 4.10.3.
Prepare a monitoring plan for all mitigation activities.	The requirement for a comprehensive Environmental Inspection and Compliance Monitoring Program and Plan (EICMPP)/Mitigation Monitoring, Reporting, and Compliance Program (MMRCP) is discussed in APM BIO-1 in Section 4.3.2.
Locate projects within energy corridors to promote effective use of the corridor by subsequent applicants.	As shown in Figure 3.10-2, the placement of the gen-tie line in the corridor has been designed to minimize the intrusion on the corridor.

Table F-1. Conformance with IOPs for Use of Section 368 Corridor

Summary of IOP[1, 2]	Manner of Addressing IOP in the PA/EIS/EIR
Identify and delineate existing underground metallic pipelines to avoid accelerating corrosion.	There are no pipelines reported in the corridor.
Prepare an access road siting and management plan.	The requirement for an access road siting and management plan is incorporated into Appendix G, Mitigation Measure TRN-2.
Prepare a comprehensive transportation plan for transport of transmission tower components and equipment.	The requirement for a comprehensive transportation plan is incorporated into Appendix G, Mitigation Measure TRN-2.
Consult with local planning authorities regarding increased traffic during construction.	Coordination with local authorities is addressed in Section 4.17.2 as part of APM TRA-2.
Conduct an initial scoping assessment to determine whether construction activities would disturb formations that may contain important paleontological resources.	The Applicant's Preliminary Paleontological Resources Assessment Technical Report is discussed in Section 3.13.1.1.
If areas with high potential to contain paleontological material have been identified, prepare a paleontological resources management and mitigation plan.	The components of the Applicant's Paleontological Resource Impact Mitigation Plan are discussed in Section 4.13.2 as part of APM Paleo-2.
Develop a protocol for unexpected discoveries of significant paleontological resources.	The components of the Applicant's Paleontological Resource Impact Mitigation Plan are discussed in Section 4.13.2 as part of APM Paleo-2.
Identify important, sensitive, or unique habitats and BLM special status species.	The results of vegetation surveys are discussed in Section 3.3.1, and the results of wildlife surveys are discussed in Section 3.4.1.1.
Prepare a habitat restoration plan.	The requirements for a Habitat Enhancement/Restoration Plan are discussed as part of Appendix G, Mitigation Measures VEG-9.C and VIS-4.
Identify wetlands, riparian habitats, streams, and other aquatic habitats.	The results of the Applicant's surveys for wetlands and other jurisdictional waters are discussed in Sections 3.3.1.4 and 4.3.3.1.
Develop an integrated vegetation management plan.	The components of the Applicant's Vegetation Resources Management Plan are discussed in Section 2.3.7.2 and APM BIO-4. The components of the Applicant's Integrated Weed Management Plan are discussed in Section 2.3.7.2 and APM BIO-5.
Cultural resources management services and individuals providing those services shall meet the Secretary of the Interior's Standards for Archeology and Historic Preservation.	The qualifications for cultural resource management services are specified in Appendix G, Mitigation Measure CULTURAL-5.
Identify and evaluate all historic properties within the APE.	The results of field investigations to identify historic properties are presented in Section 3.5.1.6.6.
Develop a cultural resources management plan.	The requirements for a Plan for Archaeological Monitoring Post-Review, Discovery, and Unanticipated Effects are discussed in Appendix G, Mitigation Measure CULTURAL-1.
Provide cultural resources training for project personnel.	The requirements for cultural/historical sensitivity training for the construction staff are presented in Appendix G, Mitigation Measure CULTURAL-7.

Table F-1. Conformance with IOPs for Use of Section 368 Corridor

Summary of IOP[1, 2]	Manner of Addressing IOP in the PA/EIS/EIR
If adverse effects to historic properties will result from a project, develop a Historic Property Treatment Plan in consultation with the SHPO.	The requirements for the Historic Properties Treatment Plan are discussed in Section 4.5.1.2.
Cultural resources inventory, evaluation, and mitigation practices should incorporate modeling and sampling strategies to the extent practicable.	The incorporation of modeling into the cultural resources inventory is discussed in Chapter 4 of the Class III Archaeological Survey Report (Appendix P).
Provide cultural resources reports and data in an electronic format that is approved by the agency POC.	The reports were provided in electronic format, which was accepted by the agencies.
Include development of historical contexts in cultural resources inventory procedures.	The use of historical contexts in making NRHP-eligibility evaluations and recommendations is discussed in Chapter 5 of the Class III Archaeological Survey Report (Appendix P).
Comply with all laws, policies, and regulations pertaining to government-to-government consultation with Federally recognized tribes.	Government-to-government consultation is discussed in Sections 4.5.3.1 and 6.3.3.
Comply with all pertinent laws, policies, and regulations addressing cultural and other resources important to Tribes, including the NHPA, ARPA, and NAGPRA.	The applicable laws, policies, and regulations, including NHPA, ARPA, and NAGPRA, are discussed in Appendix D, Section D.5.
Recognize the significance to many tribes of traditional cultural places.	Section 3.5.1.6.5 discusses the results of the search for Native American Traditional Cultural Places (TCPs).
Develop protocol for inadvertent discovery of Native American remains and funerary items.	Procedures for inadvertent discovery of human remains are addressed in Appendix G, Mitigation Measure CULTURAL-3.
Identify and consider visual resource management issues.	Visual Resource Management impacts are evaluated in Section 4.19.3.
Prepare a VRM plan.	The Applicant's Visual Resources Technical Report (Appendix U) provides the existing VRM management class information specified in the IOP. This information is discussed in Section 3.19.1.5 and 4.19.1.
Perform visual and scenic mitigation through integrated field assessment, field photo documentation, and visual simulation software.	The procedures used and results of the field assessment and simulation is provided in the Applicant's Visual Resources Technical Report (Appendix U). This information is discussed in Section 4.19.1.
Develop adequate terrain mapping on a landscape/viewshed scale.	Section 3.2 of the Applicant's Visual Resources Technical Report (Appendix U) describes how scale was considered in the visual analysis. The approach evaluated baseline conditions at two spatial scales: Landscape-level scale, in which the regional landscape setting and scenic values are defined; and Project-scale, in which the Project site was assessed from Key Observation Points (KOPs).

Table F-1. Conformance with IOPs for Use of Section 368 Corridor

Summary of IOP[1, 2]	Manner of Addressing IOP in the PA/EIS/EIR
Consider and incorporate best management practices for visual resources.	The incorporation of BMPs related to lighting into the Project is discussed in Section 4.19.2. Section 4.19.2 also addresses BMPs related to materials and screening of facilities. BMPs associated with site disturbance, maintenance of existing vegetation, reclamation, and general housekeeping are addressed in the discussions of those specific resources.
Comply with VRM objectives through the use of the BLM contrast rating procedures.	The methodology for the visual analysis, including use of the Visual Contrast Rating analysis, is discussed in Section 4.19.1. Conformance with the VRM objectives is discussed in Section 4.19.3.
Comply with FAA regulations to avoid potential safety issues related to proximity to airports.	Compliance with FAA regulations is discussed in Section 4.9.3.
Develop a health and safety program to protect workers and the general public.	The Applicant's intention to develop an Environmental Health and Safety Plan is discussed in Section 2.3.7.4.
Establish a setback from roads and other public access areas to prevent accidents resulting from various hazards.	An existing public road is located within the corridor, along the northern side of the existing transmission lines. The Project's gen-tie line would be located on the southern side of the existing transmission lines, and is therefore setback further from the public road than are the existing lines.
Develop a comprehensive emergency plan that considers the vulnerabilities of the system to all credible events.	Section 2.3.7.1 discusses the components of the Applicant's Hazardous Materials Management and Emergency Response Plan.
Identify all Federal, state, and local regulations pertaining to environmental protection, worker safety and health, public safety, and system reliability.	Regulations pertaining to environmental protection, worker safety and health, public safety, and system reliability are identified in Appendix D, Section D.9.
Develop a fire management strategy to minimize the potential for a human-caused fire.	The requirements for a Fire Safety Plan are specified in Appendix G, Mitigation Measure Fire-1.
Work with the local land management agency to identify project areas that may incur heavy fuel build-ups.	The requirements for a Fire Safety Plan are specified in Appendix G, Mitigation Measure Fire-1. The Plan includes requirements for vegetation management to address invasive plants and fuel buildup.
Project Construction	
Be aware of liabilities pertaining to environmental hazards, safety standards, and military flying areas.	Regulations pertaining to environmental protection, worker safety and health and public safety are identified in Appendix D, Section D.9. There are no military flying areas near the Project.
Locate all stationary construction equipment as far as practicable from nearby residences.	The nearest residence is located approximately 3700 feet north of the Project. The locations of sensitive receptors are discussed in Section 3.2.1.5 (for air quality), 3.9.1.1 (for hazardous materials), and 3.12.1.2 (for noise).
Salvage, safeguard, and re-apply topsoil from all excavations.	Requirements for stockpiling of topsoil are specified in Section 2.3.4.3 and Appendix G, Mitigation Measure VEG-8.

Table F-1. Conformance with IOPs for Use of Section 368 Corridor

Summary of IOP[1, 2]	Manner of Addressing IOP in the PA/EIS/EIR
Restore all areas of disturbed soil.	Requirements for restoration of areas of disturbed soil are specified in Sections 2.3.5, 2.3.6, 2.3.7.5, APM BIO-2, and Appendix G, Mitigation Measure VEG-7.
Do not create excessive slopes during excavation.	No excavation would be required for construction of the gen-tie line.
Backfill foundations and trenches with originally excavated material.	No excavation would be required for construction of the gen-tie line.
Borrow fill material only from authorized sites.	No borrow material would be required for construction of the gen-tie line.
Implement erosion controls complying with county, state, and Federal standards.	Erosion controls and stormwater management are addressed in Sections 2.3.7.1, 2.3.7.9, and Appendix G, Mitigation Measure WATER-1.
Minimize intermittent stream crossings to the extent practicable.	The route of the gen-tie follows the shortest route possible between the On-Site Substation and the CRSS, and minimizes the crossing of intermittent drainages.
Avoid alteration of existing drainage systems.	No alteration of existing drainage systems would be required for construction of the gen-tie line.
Construction activities shall follow the protective measures and protocols identified in the paleontological resources mitigation plan.	The Applicant's Preliminary Paleontological Resources Assessment Technical Report is discussed in Section 3.13.1.1.
All paleontological specimens found remain the property of the U.S. government.	APM Paleo-1 specifies procedures for sending specimens to a designated museum repository.
Identify and mark, with flagging, areas known to support ESA-listed species and BLM special status species.	Requirements for flagging protected areas are specified in Section 2.3.7.5, APM BIO-4, and Appendix G, Mitigation Measure VEG-8.
Conduct pre-construction meeting with BLM landscape architects or other visual resource specialist to coordinate on VRM mitigation strategy.	Requirements for a pre-construction meeting are specified in Appendix G, Mitigation Measure VIS-2.
For areas having a high potential for cultural resources, but for which no such resources are found during pre-construction field surveys, monitor ground-disturbing activities by a professionally qualified cultural resources specialist.	Requirements for monitoring ground-disturbing activities are specified in Appendix G, Mitigation Measure CULTURAL-1.
When human remains, funerary objects, sacred objects, or other objects of cultural patrimony are discovered, follow the provisions of NAGPRA.	Procedures for inadvertent discovery of human remains, in compliance with NAGPRA, are addressed in Appendix G, Mitigation Measure CULTURAL-3.
Use a licensed hauler to periodically remove wastewater generated by temporary, portable sanitary facilities.	The Applicant's proposed procedures for management of sanitary facilities are addressed in Section 2.3.3.9.
Store all hazardous materials brought to the site in appropriate containers.	The Applicant's proposed procedures for management of hazardous materials are addressed in Section 2.3.7.1.
Cover construction materials and stockpiled soils if these materials are sources of fugitive dust.	The Applicant's proposed procedures for covering stockpiles to minimize fugitive dust are addressed in Section 2.3.7.6.

Table F-1. Conformance with IOPs for Use of Section 368 Corridor

Summary of IOP[1, 2]	Manner of Addressing IOP in the PA/EIS/EIR
Water land before and after clearing activities to minimize fugitive dust.	The Applicant's proposed procedures for the use of water for dust control are addressed in Section 2.3.7.6.
Limit noisy construction activities to daytime, on weekdays.	Section 2.3.4.7 discusses the Applicant's proposed construction schedule, which may include work at night. The discussion specifies that work taking place outside of typical hours would comply with Riverside County standards for construction noise levels
Ensure that all construction equipment is adequately muffled and maintained during periods of high fire danger.	The requirement for maintaining mufflers in good working order are specified in Appendix G, Mitigation Measure FIRE-1.
Store flammable materials in appropriate containers.	The Applicant's proposed procedure for storing hazardous materials, including flammable fuels, in appropriate containers is specified in Section 2.3.7.1.
Project Operation	
Review existing information regarding plant and animal species and their habitats, and identify impacts to the appropriate agencies.	The results of vegetation surveys are discussed in Section 3.3.1, and the results of wildlife surveys are discussed in Section 3.4.1.1.
Avoid harassment or disturbance of wildlife.	The training to be provided to staff regarding harassment or disturbance of wildlife is discussed in Appendix G, Mitigation Measure VEG-6.
Report observations of potential wildlife problems, including wildlife mortality.	The requirement to report observations of dead or injured wildlife is specified in Appendix G, Mitigation Measure VEG-2.
Use pesticides as specified in the integrated vegetation management plan.	The Applicant's proposed procedure for using pesticides, as part of their IWMP, is discussed in Section 2.3.7.2.
Provide secondary containment for all onsite hazardous materials.	The Applicant's proposed procedure for providing secondary containment for hazardous materials is discussed in Sections 2.3.7.1 and 4.9.1.
Ensure that wastes are properly containerized and removed for disposal periodically at appropriate offsite disposal facilities.	The Applicant's proposed procedure for offsite disposal of solid wastes is discussed in Section 2.3.7.1.
In the event of an accidental release, initiate spill cleanup procedures.	The Applicant's proposed procedure for responding to accidental releases is addressed in Section 2.3.7.1.
Use dust abatement techniques on unpaved, unvegetated surfaces. Do not use used oil for dust abatement.	The Applicant's proposed procedures for the use of water for dust control are addressed in Section 2.3.7.6.
Ensure that all operational equipment has sound-control devices that are no less effective than those provided on the original equipment.	Operation of the gen-tie line would not involve equipment that generates noise.
Project Decommissioning	
Perform decommissioning in conformance with agency standards.	Components of the Applicant's Draft Decommissioning and Site Reclamation Plan are discussed in Section 2.3.6.

Table F-1. Conformance with IOPs for Use of Section 368 Corridor

Summary of IOP[1, 2]	Manner of Addressing IOP in the PA/EIS/EIR
Remove gravel work pads and other borrow material.	No gravel or other borrow materials are proposed for use during construction of the gen-tie line.
Remove and properly close wells constructed to support operations.	No wells would be installed within the utility corridor.
Remove all equipment, components, and above-ground structures to a depth of 3 feet.	Requirements for decommissioning of the gen-tie line are addressed in Appendix G, Mitigation Measure VIS-4.
Remove dismantled and cleaned components promptly.	Requirements for decommissioning of the gen-tie line are addressed in Appendix G, Mitigation Measure VIS-4.
At the close of decommissioning, provide the Federal land manager survey data showing the locations of all below-grade components left in place.	Requirements for decommissioning of the gen-tie line are addressed in Appendix G, Mitigation Measure VIS-4.
Obtain and implement a SWPPP prior to beginning decommissioning.	Components of the Applicant's Draft Decommissioning and Site Reclamation Plan, including implementation of a decommissioning SWPPP, are discussed in Section 2.3.6.
Access roads to be used for decommissioning shall follow the paths of access roads established during construction to the greatest extent possible.	Requirements for decommissioning of the gen-tie line are addressed in Appendix G, Mitigation Measure VIS-4.
Topsoil removed during decommissioning shall be salvaged and reapplied during final reclamation.	Requirements for decommissioning, including salvage and reapplying topsoil, are addressed in Appendix G, Mitigation Measure VIS-4.
Vegetation cover, composition, and diversity shall be restored to values commensurate with the ecological setting.	Specifications for revegetation activities, including cover, composition, and diversity, are discussed in Appendix G, Mitigation Measure VEG-8.19.
All fuels, hazardous materials, and other chemicals shall be removed from the site and properly disposed of.	The Applicant's proposed procedure for decommissioning, including removal of hazardous materials, is discussed in Section 2.3.6.
Incidental spills of petroleum products and other chemicals shall be removed and the affected area cleaned to applicable standards.	The Applicant's proposed procedure for responding to accidental releases is addressed in Section 2.3.7.1.
Solid wastes generated during decommissioning shall be accumulated, transported, and disposed in permitted offsite facilities. No solid wastes shall be disposed within the footprint of the corridor.	The Applicant's proposed procedure for decommissioning, including offsite disposal of solid wastes, is discussed in Section 2.3.6.
Hazardous wastes generated as a result of cleaning of components shall be containerized and disposed of in permitted facilities.	The Applicant's proposed procedure for decommissioning, including management of waste liquid from cleaning activities, is discussed in Section 2.3.6.

Notes:
1 – Only IOPs which are relevant to electrical transmission and to resources present at the Project area, are evaluated. All other IOPs are not applicable to the Project.
2 – IOPs are applicable to the portion of the ROW within the gen-tie corridor.

F.3. LOCAL PLAN CONSISTENCY

The privately owned parcel under Riverside County jurisdiction is designated as Open Space-Rural in the Riverside County General Plan (Riverside County 2015a). The policies that are relevant to the Project are presented in Appendix D by resource. The conformance of the Project with these policies is evaluated throughout Chapter 4, and is summarized below in Table F-2.

Table F-2. Conformance with Regional/Local Land Use Plans, Policies, and Regulations

Policy/Regulation/Goals	Conformance
Riverside County General Plan	
Policy AQ 2.1. The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible.	Conforms: The distance of the Project from sensitive receptors, and the resulting impacts, are evaluated in Sections 4.2, 4.9, and 4.12. No impacts were identified.
Policy AQ 2.2. Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.	Conforms: The distance of the Project from sensitive receptors, and the resulting impacts, are evaluated in Sections 4.2, 4.9, and 4.12. No impacts were identified.
Policy AQ 4.7. To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB [South Coast Air Basin], the Environmental Protection Agency and the California Air Resources Board.	Conforms: Section 4.2.2 discusses APMs to mitigate emissions. Additional measures are required, as discussed in Appendix G, Section U.2.
Policy AQ 4.10. Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended.	Conforms: Appendix G, Mitigation Measure AQ-1 requires that ground disturbing activities be suspended when wind speeds reach 25 miles per hour.

Table F-2. Conformance with Regional/Local Land Use Plans, Policies, and Regulations

Policy/Regulation/Goals	Conformance
Policy C 2.1. The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan (Figure-1) which are currently County maintained, or are intended to be accepted into the County maintained roadway system: LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans. LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans. LOS E may be allowed by the Board of Supervisors within designated areas where transit- oriented development and walkable communities are proposed. Notwithstanding the forgoing minimum LOS targets, the Board of Supervisors may, on occasion by virtue of their discretionary powers, approve a project that fails to meet these LOS targets in order to balance congestion management considerations in relation to benefits, environmental impacts and costs, provided an Environmental Impact Report, or equivalent, has been completed to fully evaluate the impacts of such approval. Any such approval must incorporate all feasible mitigation measures, make specific findings to support the decision, and adopt a statement of overriding considerations.	Conforms: Section 4.17.3 shows that Project construction would result in operation of the intersection of SR-78 and 16th Avenue at a LOS F during peak PM hours. Even with implementation of APM TRA-1, the Project would result in LOS D, which would still not comply with the Riverside County General Plan target of LOS C along County-maintained roads and state highways. Mitigation Measure TRN-3 would require the Applicant to modify TRA-1 in order to ensure that the intersection operates at LOS C.
Policy C 2.2. Require that new development prepare a traffic impact analysis as warranted by the Riverside County Traffic Impact Analysis Preparation Guidelines or as approved by the Director of Transportation. Apply level of service targets to new development per the Riverside County Traffic Impact Analysis Preparation Guidelines to evaluate traffic impacts and identify appropriate mitigation measures for new development.	Conforms: The Applicant performed a Traffic Impact Analysis which identified impacts, and proposed mitigation to address impacts.

Table F-2. Conformance with Regional/Local Land Use Plans, Policies, and Regulations

Policy/Regulation/Goals	Conformance
Policy C 2.3. Traffic studies prepared for development entitlements (tracts, plot plans, public use permits, conditional use permits, etc.) shall identify project related traffic impacts and determine the "significance" of such impacts in compliance with CEQA and the Riverside County Congestion Management Program Requirements.	Conforms: The Applicant performed a Traffic Impact Analysis which identified impacts, and proposed mitigation to address impacts. The significance of the traffic impacts were evaluated in Section 4.17.3.
Policy C 20.6. Control dust and mitigate other environmental impacts during all stages of roadway construction.	Conforms: Appendix G, Mitigation Measure AQ-1 (*Dust Control Plan*) is required to control dust from the Project, including dust associated with road construction.
Policy C 20.15. Implement National Pollutant Discharge Elimination System Best Management Practices relating to construction of roadways to control runoff contamination from affecting the groundwater supply.	Conforms: As discussed in Section 4.20.3, the Project will conform to the California State Water Resource Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges (General Permit) for activities regarding runoff and erosion control, as well as applicable regional, county, and local requirements.
Policy C 25.2. Locate new and relocated utilities underground when possible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.	Conforms: In designing the Project, the Applicant has proposed locating all utilities underground, where feasible. As discussed Sections 2.3.4.5 and 2.3.4.6, the only above-ground utilities would be the internal distribution lines between the PVCSs and the On-Site Substation, and for the gen-tie.
Policy LU 1.8. As required by the Airport Land Use Law, submit certain proposed actions to the Riverside County Airport Land Use Commission for review. Such actions include proposed amendments to the general plan, area plans, or specific plans, as well as proposed revisions to the zoning ordinance and building codes.	Conforms: The Riverside County Airport Land Use Commission found the Project consistent with the Riverside County Airport Land Use Compatibility Plan.
Policy LU 5.1. Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and child day care centers (i.e. infant, toddlers, preschool and school age children), transportation systems, and fire/police/medical services.	Conforms: The Project would not create a permanent increase in population; therefore, existing infrastructure and services would be adequate.
Policy LU 9.2. Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and Federal and state regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act.	Conforms: The Project would comply with NEPA and CEQA and all necessary compliance measures.
Policy LU 11.2. Ensure adequate separation between pollution producing activities and sensitive emission receptors, such as hospitals, residences, child care centers and schools.	Conforms: The distance of the Project from sensitive receptors, and the resulting impacts, are evaluated in Sections 4.2, 4.9, and 4.12. No impacts were identified.

Table F-2. Conformance with Regional/Local Land Use Plans, Policies, and Regulations

Policy/Regulation/Goals	Conformance
Policy LU 14.1. Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.	Conforms: The Project would be not be located in a designated scenic vista, and would be situated on lands that are adjacent to existing electrical facilities.
Policy LU 14.3. Ensure that the design and appearance of new landscaping, structures, equipment, signs or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment.	Conforms: Although the Project would be visible from an Eligible County Scenic Highway (I-10), the view would be compatible with the adjacent land uses, which include other solar facilities and transmission lines.
Policy LU 14.4. Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways.	Conforms: The Project would be not be located adjacent to a Designated and Eligible State and County Scenic Highway.
Policy LU 14.5. Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground.	Does not Conform: The Project proposes the use of above ground distribution lines within view of an Eligible Scenic Highway; however, they would be parallel to existing transmission and distribution lines.
Policy LU 15.9. Ensure that no structures or activities encroach upon or adversely affect the use of navigable airspace.	Conforms: As discussed in Section 4.9.3, the Project has obtained and ALUC review and approval, and the Project would be required to receive a "No Hazard to Air Navigation" determination from FAA.
Policy LU 17.2. Permit and encourage, in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including but not limited to, the development of solar power plants in the County of Riverside.	Conforms: The Project would provide 450 MW of renewable solar energy.
Policy LU 29.6. Require that commercial projects abutting residential properties protect the residential use from the impacts of noise, light, fumes, odors, vehicular traffic, parking, and operational hazards.	Conforms: The Project would be not abut residential properties.
Policy LU 30.8. Require that industrial development be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area.	Conforms: As discussed in Section 4.19.2, the Project was designed to minimize visual impacts.
Policy N 1.4. Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys.	Conforms: As discussed in Section 4.12.1, the Applicant performed noise surveys in order to inform an analysis of noise impacts to existing land uses.
Policy N 1.5. Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.	Conforms: As discussed in Section 4.12.2, the applicant has proposed APMs to address potential adverse noise impacts on residents.
Policy N 3.3. Ensure compatibility between industrial development and adjacent land uses. To achieve compatibility, industrial development projects may be required to include noise mitigation measures to avoid or minimize project impacts on adjacent uses.	Conforms: As discussed in Section 4.12.2, the applicant has proposed APMs to address potential adverse noise impacts on residents.

Table F-2. Conformance with Regional/Local Land Use Plans, Policies, and Regulations

Policy/Regulation/Goals	Conformance
Policy N 7.4. Check each development proposal to determine if it is located within an airport noise impact area as depicted in the applicable Area Plan's Policy Area section regarding Airport Influence Areas. Development proposals within a noise impact area shall comply with applicable airport land use noise compatibility criteria.	Conforms: A review of Map BL-3 of the RCALUCP shows that the airport noise compatibility contours do not extend south of I-10, so the Project is not located within the noise impact area.
Policy N 12.1. Minimize the impacts of construction noise on adjacent uses within acceptable practices.	Conforms: As discussed in Section 4.12.2, the applicant has proposed APMs to address potential adverse construction noise impacts on residents.
Policy N 12.2. Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.	Conforms: As discussed in Section 2.3.4.7, the Applicant proposes to perform construction 7:00 a.m. to 5:00 p.m., except when necessary for safety reasons, such as making final electrical terminations after dark when no energy is being produced. In addition, Section 4.12.3.1 discusses that generators may be required to provide lighting and HVAC for offices and security personnel through nighttime hours. Noise modeling shows that no ambient noise changes over 10 dBA are expected at any of the three nearest noise sensitive receptors under any of the modeled meteorological conditions.
OS 19.3 - Review proposed development for the possibility of cultural resources and for compliance with the cultural resources program.	Conforms: Section 3.5.1 describes the cultural resources present in the APE, and Section 4.5.3 analyzes the potential for Project-related impacts.
OS 19.5 - Exercise sensitivity and respect for human remains form both prehistoric and historic time periods and comply with all applicable laws concerning such remains.	Conforms: Appendix D, Section D.5 describes the applicability of the Native American Graves Protection and Repatriation Act, and Appendix G, Mitigation Measure CULTURAL-3 specifies requirements should remains be encountered.
OS 19.6. Whenever existing information indicated that a site proposed for development has high paleontological sensitivity as shown on Figure OS-7, a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.	Conforms: APMs Paleo-1 and Paleo-2, in Section 4.13.2, specify the requirements for a PRIMP.
OS 19.7. Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown in Figure OS-7, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.	Conforms: Applicant- APMs Paleo-1 and Paleo-2, in Section 4.13.2, specify the requirements for documenting the extent and potential significance should any fossils be encountered, including mitigation.

Table F-2. Conformance with Regional/Local Land Use Plans, Policies, and Regulations

Policy/Regulation/Goals	Conformance
OS 19.8. Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-7, a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources.	Conforms: APMs Paleo-1 and Paleo-2, in Section 4.13.2, specify the requirements for documenting the extent and potential significance should any fossils be encountered, including mitigation.
Policy OS 21.1. Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.	Conforms: The Project would be not be located in a designated scenic vista, and would be situated on lands that are adjacent to existing electrical facilities.
Policy OS 22.1. Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses.	Conforms: Although the Project would be visible from an Eligible County Scenic Highway (I-10), the view would be compatible with the adjacent land uses, which include other solar facilities and transmission lines.
Policy OS 22.4. Impose conditions on development within scenic highway corridors requiring dedication of scenic easements consistent with the Scenic Highways Plan, when it is necessary to preserve unique or special visual features.	Conforms: Although the Project would be visible from an Eligible County Scenic Highway (I-10), the view would be compatible with the adjacent land uses, which include other solar facilities and transmission lines.
Policy S 1.1. Mitigate hazard impacts through adoption and strict enforcement of current building codes, which will be amended as necessary when local deficiencies are identified.	Conforms: Appendix D, Section D.7 specifies the International Building Code and California Building Code requirements for the Project.
Policy S 5.1. Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features.	Conforms: Section 2.3.7.3 describes elements of the Project proposed to address fire prevention, and Appendix D, Section D.21 describes the International Fire Code, California Fire Code, and Riverside County Fire Department requirements for the Project.
Policy S 7.3. Require commercial businesses, utilities, and industrial facilities that handle hazardous materials to: Install automatic fire and hazardous materials detection, reporting and shut -off devices; and Install an alternative communication system in the event power is out or telephone service is saturated following an earthquake.	Conforms: Section 2.3.3.6 describes the redundancy that would be incorporated into the communication system.
Palo Verde Valley Area Plan	

Table F-2. Conformance with Regional/Local Land Use Plans, Policies, and Regulations

Policy/Regulation/Goals	Conformance
Policy PVVAP 7.2. Maintain Riverside County's roadway Level of Service standards as described in the Level of Service section of the General Plan Circulation Element.	Does not conform: Section 4.17.3 shows that Project construction would result in operation of the intersection of SR-78 and 16th Avenue at a LOS F during peak PM hours. Even with implementation of APM TRA-1, the Project would result in LOS D, which would still not comply with the Riverside County General Plan target of LOS C along County-maintained roads and state highways.
PVVAP 10.1. Protect the scenic highways in the Palo Verde Valley planning area from change that would diminish the aesthetic value of adjacent properties in accordance with the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.	Conforms: Although the Project would be visible from an Eligible County Scenic Highway (I-10), the view would be compatible with the adjacent land uses, which include other solar facilities and transmission lines.
PVVAP 15.1. Protect life and property from seismic related incidents through adherence to the Seismic Hazards section of the General Plan Safety Element.	Conforms: Section 4.7.3 evaluates potential impacts associated with seismic events. No threats to life or property were identified.
Riverside County Zoning Ordinance (Ordinance 348)	
Section 15.1.d. (32) Uses Permitted in W-2 Zone (Controlled Development Areas) - This zone permits a solar power plant on lot 10 acres or larger upon issuance of a CUP.	Conforms: With approval of a CUP, the Project would be an allowable use under this zone.
Riverside County Airport Land Use Compatibility Plan	
Policy 3.1.4. Nonresidential Development: The compatibility of nonresidential development shall be assessed primarily with respect to its usage intensity (the number of people per acre) and the noise-sensitivity of the use.	Conforms: Table 3.9-1 specifies the compatibility criteria for the Project, due to its location within Zone E. Zone E imposes no limits on usage intensity or noise sensitivity.
Policy 3.1.6. Other Development Conditions: All types of proposed development shall be required to meet the additional conditions listed in Table 2A for the respective compatibility zone where the development is to be located.	Conforms: Table 3.9-1 specifies the compatibility criteria for the Project, due to its location within Zone E. Zone E imposes no limits related to easement, deed notice, real estate disclosure, or noise level. With respect to airspace review, the Project has obtained and ALUC review and approval, and would be required to receive a "No Hazard to Air Navigation" determination from FAA.
Policy 4.1.1. Policy Objective: The purpose of noise compatibility policies is to avoid establishment of noise-sensitive land uses in the portions of airport environs that are exposed to significant levels of aircraft noise.	Conforms: Table 3.9-1 specifies the compatibility criteria for the Project, due to its location within Zone E. Zone E imposes no limits on noise sensitivity.

Table F-2. Conformance with Regional/Local Land Use Plans, Policies, and Regulations

Policy/Regulation/Goals	Conformance
Policy 4.1.5. Noise Exposure for Other Land Uses: Noise level compatibility standards for other types of land uses shall be applied in the same manner as the above residential noise level criteria. The extent of outdoor activity associated with a particular land use is an important factor to be considered in evaluating its compatibility with airport noise. Examples of acceptable noise levels for other land uses in an airport's vicinity are presented in Table 2B.	Conforms: Table 3.9-1 specifies the compatibility criteria for the Project, due to its location within Zone E. Zone E imposes no limits on noise sensitivity.
Policy 4.1.6. Interior Noise Levels: Land uses for which interior activities may be easily disrupted by noise shall be required to comply with specified interior noise level criteria.	Conforms: The Project does not include interior activities which may be disrupted by noise. Also, Table 3.9-1 specifies the compatibility criteria for the Project, due to its location within Zone E. Zone E imposes no limits on noise sensitivity.
Policy 4.3.7. New land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area.	Conforms: As discussed in Section 4.9.3, the ALUC performed a review of consistency with the RCALUCP, including electrical interference, lighting, glare, impaired visibility, and actions that have the potential to cause attraction of birds. The ALUC found the Project to be consistent with the RCALUCP.

Appendix G

APPENDIX G
MITIGATION MEASURES

APPENDIX G - MITIGATION MEASURES

G.1 INTRODUCTION

The impact analyses are based on the Applicant's description of their proposed Project, and that description includes, for some resources, Applicant-Proposed Measures (APMs). The impact analyses assume that APMs are to be implemented, and these measures are therefore requirements for approval of the Project.

For impacts identified in the following resource sections, measures have been developed to avoid or reduce potential environmental effects that would be implemented during all appropriate phases of the Project from initial ground breaking and construction, to operation and maintenance, and through closure and decommissioning. The measures include a combination of the following:

1. APMs, as specified in the Applicant's POD, management plans, and technical reports;
2. Regulatory requirements of other Federal, state, and local agencies;
3. USFWS terms and conditions identified in the BO; and
4. Additional BLM-proposed mitigation measures, ROW grant terms and conditions, and best management practices (BMPs).

These requirements generically are referred to as "mitigation measures" throughout this Draft PA/EIS/EIR. Because these mitigation measures are derived from a variety of sources, they also are required, and their implementation regulated, by the various agencies. The Applicant would prepare an Environmental Inspection and Compliance Monitoring Program and Plan (EICMPP)/Mitigation Monitoring, Reporting, and Compliance Program (MMRCP) ensuring the effective implementation of the mitigation measures identified to address Project impacts. All management and control plans that are to be developed under any APM or mitigation measure must be developed and approved by the applicable agency(ies) prior to issuance of a County grading permit. The timing, responsible agency, and methods for verification of each measure are provided in Table G-22-1.

Many of the other mitigation measures are required by agencies other than the BLM and their implementation would be enforced by those other agencies against the Applicant. For instance, USFWS's FESA §7 Reasonable and Prudent Measures will be included in the ROD, and the NHPA §106 Memorandum of Agreement (MOA), will include a number of obligations enforceable by signatories, including SHPO and ACHP, that also will be included in the ROD. The Applicant would be required by the ROD and the ROW grant to comply with the requirements of those other agencies (see, e.g., 43 CFR §2805.12(a) [Federal and state laws and regulations]; §2805.12(i)(6) [more stringent state standards for public health and safety, environmental protection and siting, constructing, operating, and maintaining any facilities and improvements on the ROW]). Any non-compliance with implementation of these other Federal or state requirements may impact the approval status of the ROD and ROW grant. In addition, the CUP and PUP to be issued by the County will require compliance with mitigation measures required by state or local laws. Any non-compliance with these requirements could likewise impact the status of state and local approvals.

G.2 AIR RESOURCES

The following Project-specific mitigation measures were developed to reduce and/or avoid potential air quality impacts associated with the Project and alternatives.

AQ-1: Dust Control Plan. The Applicant shall develop and implement their Dust Control Plan that describes the fugitive dust control measures that would be implemented and monitored at all locations of proposed facility construction. The plan shall be submitted to MDAQMD no less than 60 days prior to the start of construction. The plan shall be developed in conjunction with soil scientists engaged by the BLM, shall be designated as a Dust Control and Soil Stabilization Plan, and shall incorporate methods for soil stabilization. This plan shall comply with the mitigation measures described in the Fugitive Dust Control Rules enforced by Mojave Desert Air Quality Management District (MDAQMD) (Rule 403.2), as well as the existing State Implementation Plan (SIP) available for PM_{10} and $PM_{2.5}$, and the BLM Fugitive Dust/PM_{10} Emissions Control Strategy for the Mojave Desert Planning Area. The plan shall be incorporated into all contracts and contract specifications for construction work. The plan shall outline the steps to be taken to minimize fugitive dust generated by construction activities by:

- Describing each active operation that may result in the generation of fugitive dust;
- Identifying all sources of fugitive dust, e.g., earth moving, storage piles, vehicular traffic;
- Describing the control measures to be applied to each of the sources identified. The descriptions shall be sufficiently detailed to demonstrate that the best available control measures required by the MDAQMD for linear projects are used; and
- Providing the following control measures, in addition to or as listed in the applicable rules but not limited to:
  - Frequent watering or stabilization of excavation, spoils, access roads, storage piles, and other sources of fugitive dust (parking areas, staging areas, other) if construction activity causes persistent visible emissions of fugitive dust beyond the work area;
  - Use of street sweeping and trackout devices at the construction site. Sweep streets daily (with water sweepers) if visible soil material is carried into adjacent public streets;
  - Apply BLM-approved soil stabilizers or apply water to form and maintain a crust on inactive construction areas (disturbed lands that are unused for four consecutive days);
  - Suspend ground disturbing activities when winds exceed 25 miles per hour and stabilize stockpiles (e.g., by watering or covering);
  - Pre-watering of soils prior to clearing and trenching;
  - Cover stockpiled soils with sturdy durable tarps when soils are not in immediate use;
  - Pre-moisten, as necessary to control dust or cover prior to transport, import and export dirt, sand, or loose materials;
  - Installing temporary coverings or applying soil stabilizers on storage piles when not in use. Cover loads in haul trucks or maintain at least six inches of free-board when traveling on public roads;

- Dedicating water truck or high/capacity hose to any soil screening operations;
- Minimizing drop height of material through screening equipment;
- Reducing the amount of disturbed area where possible;
- Planting vegetative ground cover as soon as possible following construction activities, in areas where such re-vegetation is planned, or stabilize as necessary until revegetation is initiated; and
- Stabilizing disturbed soil surfaces left undeveloped for solar energy capture (e.g., temporary disturbance sites and other exposed soils onsite prone to saltation and aerosolization after construction concludes).

The Applicant or its designated representative shall obtain prior approval from the MDAQMD prior to any deviations from fugitive dust control measures specified in the Dust Control Plan.

The provisions of the Dust Control Plan shall also apply to Project decommissioning activities.

The Dust Control Plan shall be prepared and submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

AQ-2: Protect the Stability of Desert Pavement Areas. The Applicant shall in general avoid disturbing desert pavement surfaces during construction. Where the BLM agrees that disturbance of the pavement is unavoidable, the Applicant shall ensure that all areas where desert pavement has been temporarily disturbed during construction of the Project shall be applied with a BLM-approved soil stabilizer where appropriate for stabilization based on soil characteristics prior to Project operation. The Applicant shall develop, for review and approval by the BLM, a plan that outlines the frequency of non-toxic soil stabilizer applications based on the specifications of the selected soil stabilizer. The Plan shall be developed in coordination with scientists engaged by the BLM to find the most efficient methods for stabilizing soil surfaces using diverse methods in addition to chemical stabilizers: e.g., development of soil biotic crusts, revegetation, construction of small netted fences, and other methods. The Plan shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

AQ-3: Construction Emissions Reduction. The Applicant shall implement the following measures to reduce emissions during construction:

- Off-road diesel-powered construction equipment fleets used on the project shall be composed in compliance with California Air Resources Board (CARB) In-Use Off-Road Vehicle Regulation rules. In addition, all retrofitted construction equipment shall be outfitted with Best Available Control Technology devices certified by the CARB;
- As feasible, reduce emissions of particulate matter and other pollutants by using alternative clean fuel technology such as electric, hydrogen fuel cells, and propane-powered equipment or compressed natural gas-powered equipment with oxidation catalysts instead of gasoline- or diesel-powered engines;
- Ensure that all construction equipment is properly tuned and maintained and shut off when not in direct use, i.e., "idling" no more than five minutes;
- Prohibit engine tampering to increase horsepower;

- Minimize use, trips, and unnecessary idling of heavy equipment;
- Reduce construction-related trips of workers and equipment, including trucks; and
- Require in model year 2010 and following years that on-road vehicles should meet, or exceed, the US EPA exhaust emissions standards for heavy-duty on-highway compression-ignition engines.

The Applicant shall prepare and maintain documentation that demonstrates implementation of the proposed emission reduction measures and required mitigation measures. The following documents and/or files shall be submitted to the agencies involved in the environmental review and permitting process for the proposed facility:

- Inventory of all equipment used during each construction activity. At a minimum, this inventory shall include an equipment description, equipment identification, identification of type of engine(s), and engine emission data; and
- The CARB Diesel Off-Road On-line Reporting System (DOORS) for registration shall be used to certify conformance with CARB In-Use Off-Road Vehicle Regulation rules.

G.3 BIOLOGICAL RESOURCES – VEGETATION

The following measures shall be implemented to reduce or avoid impacts to vegetation alliances and special-status plant species from construction, operation and maintenance, and decommissioning of the Project. Of these measures, only measures VEG-9 and VEG-10 are specific to vegetation resources. The other measures (VEG-1 through VEG-8, VEG-11, and VEG-12) are general biological mitigation measures applicable to both vegetation and wildlife.

VEG-1: Qualifications of Designated Biologist(s). Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall assign at least one Designated Biologist(s) to the Project. The Applicant shall submit the resume of the proposed Designated Biologist(s), with at least three references and contact information, to the BLM AO for confirmation that applicant meets the minimum qualifications.

The Designated Biologist(s) must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
3. Have at least one year of field experience with biological resources found in or near the Project area;
4. Meet the current USFWS Authorized Biologist qualifications criteria (http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise/DT_Auth_Bio_qualifications_statement_10-20-08.pdf), demonstrate familiarity with protocols and guidelines for the Mojave desert tortoise, and be approved by the USFWS;
5. Possess a CESA Memorandum of Understanding pursuant to §2081(a) for Mojave desert tortoise.

The resume shall demonstrate to the satisfaction of the BLM AO, in consultation with CDFW and USFWS, that the proposed Designated Biologist(s) and alternate has the appropriate training and background to effectively implement the mitigation measures.

VEG-2: Duties of the Designated Biologist(s). The Applicant shall ensure that the Designated Biologist(s) performs the activities described below during any site mobilization activities and construction-related ground disturbance such as grading, boring or trenching activities. The Designated Biologist(s) may be assisted by the approved Biological Monitor(s) but remains the contact for the Applicant and the BLM AO. The Designated Biologist(s) or approved Biological Monitor(s) Duties shall include the following:

1. Advise the Applicant's construction and operation managers on the implementation of the biological resources mitigation measures;
2. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat;
3. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
4. Periodically inspect active construction areas where animals may have become trapped. Monitor the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way;
5. Notify the Applicant of any non-compliance with any biological resources mitigation measure;
6. Respond as established in the EICMPP to inquiries of the BLM AO regarding biological resource issues;
7. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Compliance Report;
8. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on Mojave desert tortoise surveys and handling procedures; and
9. Maintain the ability to be in regular communication with representatives of CDFW, USFWS, and the BLM AO, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Data Base and BLM.

VEG-3: Identification of Biological Monitors. Prior to the start of ground disturbance and issuance of a County grading permit, the Designated Biologist(s) shall submit the resume, at least three references, and contact information of the proposed Biological Monitors to the BLM AO. The resume shall demonstrate, to the satisfaction of the BLM AO, the appropriate education and experience to accomplish the assigned biological resource tasks. The Biological Monitor is the equivalent of the USFWS-approved biologist (also "Service-approved biologist").

Biological Monitor(s) training by the Designated Biologist(s) shall include familiarity with the mitigation measures, BRMIMP, WEAP, and USFWS guidelines on Mojave desert tortoise surveys and handling procedures.

VEG-4: Duties of Biological Monitors. The Biological Monitors shall assist the Designated Biologist(s) in conducting surveys and in monitoring of site mobilization activities and construction-related ground disturbance grading, boring or trenching. The Monitors shall report issues of concern to the Designated Biologist(s), who shall remain the contact for the Applicant.

VEG-5: Authority of the Designated Biologist(s) and Biological Monitors. The Applicant's construction/operation manager shall act on the advice of the Designated Biologist(s) and Biological Monitor(s) to ensure conformance with the biological resources mitigation measures. The Designated Biologist(s) shall have the authority to immediately stop any activity and/or order any reasonable measure to avoid take of an individual of a listed species. The Designated Biologist(s) shall:

1. Require a halt to activities in any area when determined that there would be a potential take of an individual of a listed species if the activities continued; and
2. Inform the Applicant and the construction/operation manager when to resume activities.

If the Designated Biologist(s) is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist(s).

VEG-6: Worker Environmental Awareness Program. Prior to the Notice to Proceed, the Applicant shall develop and implement a Project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from the AO. The WEAP shall be administered to all on-site personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, and subcontractors. The WEAP shall be implemented during site preconstruction, construction, operation, and decommissioning. The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist(s) and consist of presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no special-status plants or wildlife shall be harmed, disturbed, or harassed;
3. Place special emphasis on Mojave desert tortoise, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
4. Include a discussion of fire prevention measures to be implemented by workers during Project activities; require workers dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;
5. Describe the temporary and permanent habitat protection measures to be implemented at the Project site;

6. Review project guidelines regarding non-compliance issues and the consequences for non-compliance, including legal protections for resources and penalties for violation of Federal and state laws;
7. Describe reporting requirements for protected resources, including requirements for notifying the designated biologist;
8. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
9. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The training shall be bilingual, and must be completed by all personnel prior to starting work on the project. The specific program can be administered by a competent individual(s). The WEAP shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

VEG-7: Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP). Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall develop a BRMIMP, and shall submit copies of the proposed BRMIMP to the BLM AO and the County for review and approval. The Applicant shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the Integrated Weed Management Plan (APM BIO-5), the Vegetation Resources Management Plan (APM BIO-4), the Desert Tortoise Translocation Plan (Mitigation Measure WIL-2), the Raven Monitoring and Control Plan (Mitigation Measure WIL-5), the Bird and Bat Conservation Strategy (Mitigation Measure WIL-6), the Burrowing Owl Protection and Mitigation Measures Plan (Mitigation Measure WIL-9), and all other biological mitigation and/or monitoring plans associated with the Project.

The BRMIMP shall include accurate and up-to-date maps depicting the location of sensitive biological resources that require temporary or permanent protection during construction, operation, and decommissioning. The BRMIMP shall include complete and detailed descriptions of the following:

1. Biological resources mitigation, including habitat restoration and soil stabilization, monitoring, and compliance measures proposed by the Applicant;
2. Biological resources mitigation measures identified by BLM and the County as necessary to avoid or mitigate impacts;
3. Biological resource mitigation, monitoring and compliance measures required in Federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;
4. Sensitive biological resources to be impacted, avoided, or mitigated by Project construction, operation, and closure (see Tables 3.3-1, 3.3-3, and 3.4-1);
5. Required mitigation measures for each sensitive biological resource;
6. Measures that shall be taken to mitigate temporary disturbances from construction activities;
7. Duration for each type of monitoring and a description of monitoring methodologies and frequency;

8. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
9. Performance standards and remedial measures to be implemented if performance standards are not met;
10. Biological resources-related facility closure measures including a description of funding mechanism(s);
11. A process for proposing plan modifications to the BLM AO and appropriate agencies for review and approval; and
12. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the Project site, or during Project surveys, to the BLM and to the CNDDB per CDFW requirements.

VEG-8: Avoidance of Biological Resources During Construction. The Applicant shall undertake the following measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to biological resources:

1. Limit Area of Disturbance. The boundaries of all areas to be disturbed (including Project facilities, gen-tie structure locations, staging areas, access roads, sites for temporary placement of spoils) shall be delineated with stakes and flagging, and temporary construction fencing, prior to construction activities in consultation with the Designated Biologist(s).
2. Stockpiles. In areas where soil removal is required, soils removed up to 6" in depth, shall be removed and windrowed separately from spoils, to a depth not to exceed 24". Spoils and topsoil shall be stockpiled separately in disturbed areas (or areas to be disturbed, either lacking or with minimal native vegetation). Windrowed topsoil shall be planted with container stock or seeded, with BLM approved genetically and ecologically appropriate native plant materials suitable for the site, within 30 days of initial disturbance in order to maintain biological soil viability. If stockpiles are to be maintained longer than 30 days, the Applicant shall establish native plants in the windrowed topsoil.
3. Parking and Staging. When possible, parking areas, staging and disposal site locations shall similarly be located in areas without native vegetation or special-status species habitat. All disturbances, Project vehicles and equipment shall be confined to the flagged and fenced areas.
4. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.
5. Minimize Traffic Impacts. Vehicular traffic during Project construction and operation shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited.

6. Monitor During Construction. In areas that have not been fenced with Mojave desert tortoise exclusion fencing and cleared, a Designated Biologist or Biological Monitor shall be present at the construction site during all Project activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall walk immediately ahead of equipment during brushing and grading activities.

7. Minimize Impacts of Transmission/Pipeline Alignments, Roads, Staging Areas. Staging areas for construction on the plant site shall be within the area that has been fenced with Mojave desert tortoise exclusion fencing and cleared. For construction activities outside of the plant site (transmission line, pipeline alignments) access roads, pulling sites, and storage and parking areas shall be designed, installed, and maintained with the goal of minimizing impacts to native plant alliances and sensitive biological resources. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) Suggested Practices for Avian Protection on Power Lines (APLIC 2006) and Mitigating Bird Collisions with Power Lines (APLIC 1994) to reduce the likelihood of large bird electrocutions and collisions.

8. Avoid Use of Toxic Substances. Soil bonding (dust suppression) and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants.

9. Minimize Lighting Impacts. Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat.

10. Monitor Active Nests: The monitoring shall be conducted in accordance with Nesting Bird Monitoring and Management Plan approved by the BLM AO. The Plan shall include management measures to prevent disturbance to all nesting birds from construction related activities. Triggers for management shall be evidence of Project-related disturbance to nesting birds such as: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Bird Monitoring and Management Plan shall include a description of management actions, which shall include, but not be limited to, limiting construction activities in an appropriate sized no-disturbance buffer that are deemed by the biologist to be the source of disturbance to the nesting bird.

11. Avoid Vehicle Impacts to Mojave desert tortoise. Parking and storage shall occur within the area enclosed by Mojave desert tortoise exclusion fencing to the extent feasible. No vehicles or construction equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of Mojave desert tortoise. If a Mojave desert tortoise is observed, it would be left to move on its own. If it does not move within 15 minutes, a Designated Biologist or Biological Monitor under the Designated Biologist's direct supervision may remove and relocate the animal to a safe location if temperatures are within the range described in the USFWS 2009 Desert Tortoise Field Manual.

12. Avoid Wildlife Pitfalls:

    a. Backfill Trenches. At the end of each work day, ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) outside the area fenced with Mojave desert tortoise exclusion fencing have been backfilled. If backfilling is not feasible,

all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with Mojave desert tortoise -exclusion fencing. All trenches, bores, and other excavations outside the areas fenced with Mojave desert tortoise exclusion fencing shall be inspected periodically throughout the day, at the end of each workday and at the beginning of each workday by the Designated Biologist or a Biological Monitor. Should a tortoise or other wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and relocate the individual as described in the Desert Tortoise Translocation Plan. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.

b. Avoid Entrapment of Mojave desert tortoise. Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground and within Mojave desert tortoise habitat (i.e., outside the fenced area) for one or more nights, shall be inspected for tortoises before the material is moved, buried or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks. These materials would not need to be inspected or capped if they are stored within the fenced area after the clearance surveys have been completed.

13. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards and to prevent the formation of puddles, which could attract Mojave desert tortoises and common ravens to construction sites. The Biological Monitor shall patrol these areas to ensure that water does not puddle and shall take appropriate action (e.g., coordinating with the contractor to reduce watering frequency) to reduce water application where necessary. The Biological Monitor shall take appropriate action (e.g., coordinating with the contractor to reduce watering frequency) to reduce water application where standing water occurs.

14. Dispose of Road-killed Animals. Road-killed animals or other carcasses detected on roads within the Project area or access road shall be immediately reported to the Designated Biologist and picked up immediately. The contractor and Designated Biologist shall be responsible for securing any appropriate Federal or state permits to handle and dispose of collected animals, including handling and disposal for scientific use. For special-status species roadkill, the Biological Monitor shall contact CDFW and USFWS within 1 working day of receipt of the carcass for guidance on disposal or storage of the carcass. The Biological Monitor shall maintain and report protected species records as described in Mitigation Measure WIL-3 (Project Notification and Reporting).

15. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The site environmental compliance lead shall be informed of any hazardous spills immediately as directed in the Project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

16. Worker Guidelines. During construction all trash and food-related waste shall be placed in wildlife-proof containers and removed weekly from the site. Workers shall not feed wildlife or bring pets to the Project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons. Vehicular traffic shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit when traveling on dirt access routes within areas not cleared by protocol level surveys where Mojave desert tortoise may be impacted shall not exceed 15 miles per hour.

17. Implement Erosion Control Measures. Standard erosion control measures shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter "Waters of the State". Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within the Project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential.

18. Monitor Ground Disturbing Activities Prior to Pre-Construction Site Mobilization. If pre-construction site mobilization requires ground-disturbing activities such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.

19. Revegetation of Temporarily Disturbed Areas. Disturbed sites shall be restored using methods approved by BLM vegetation restoration ecologists. Restoration design shall incorporate a replicated experimental design to test methods for improved and accelerated restoration of native vegetation, desert habitat, and ecosystem processes disturbed in the course of Project construction. Only BLM approved genetically and ecologically appropriate native plant materials suitable for the site shall be used for restoration.

Desert soil and vegetation ecologists designated by the BLM shall collaborate with the Applicant to prepare and implement a Revegetation Plan that restores all areas subject to temporary disturbance to pre-Project grade and conditions. This plan shall be submitted to the BLM for approval, and must be approved by the BLM prior to initiation of disturbance. In review of the plan, BLM will consider the ability of the proposed activities to support BLM's Long Term Monitoring Strategy for the Riverside East SEZ (BLM 2016), and BLM ecologists shall design experimental treatments that refine or introduce restoration treatments so that knowledge about the practice of accelerating soil stabilization and vegetation restoration increases and methods become more efficient. Temporarily disturbed areas within the Project area include, but are not limited to: all proposed locations for linear facilities, temporary access roads, berms, areas surrounding the drainage diffusers, construction work temporary lay-down areas not converted to part of the solar field, and construction equipment staging areas. The Applicant shall be responsible for preparing an accurate map of temporarily disturbed areas so that the soil and restoration ecologists will be able to begin restoring temporary disturbance areas once the operational phase of the solar facility begins.

The Revegetation Plan shall include a description of any required topsoil salvage, plant salvage, seeding techniques, inoculation of microbial organisms for plant mycorrhizae and for biotic soil crust formation, methods to stabilize and shape soil surface to reduce soil erosivity, and techniques to increase soil fertility and water holding capacity.

Restoration, including seeding of temporarily disturbed areas shall be implemented within 30 days following completion of construction. If seeding is used for reclamation, the seed shall contain no prohibited or restricted noxious weed seeds and shall be certified weed free. Seed may contain no more than 2.0 percent of "other crop" seed by weight, unless inclusion of sterile cereal grain seeds are specifically approved by the BLM as decoy seeding. Seed tags shall be submitted to the BLM at least 14 days before the date of proposed seeding for acceptance. Seed that does not meet the above criteria shall not be applied to public lands. Only native plant species which would naturally occur within the disturbed habitats shall be used for revegetation. Seed/container stock sources for revegetation shall be from within appropriate provisional or empirical seed transfer zones.

A monitoring and reporting protocol shall be a requisite part of the Plan, and the following performance standards shall be met by the end of monitoring year 2:

a. at least 80 percent of the species observed within the temporarily disturbed areas shall be native species that naturally occur in desert scrub habitats; and

b. relative cover and density of plant species within the temporarily disturbed areas shall be equal to or greater than 60 percent of native background density.

If these standards are not met, remedial revegetation measures shall be prepared and submitted to the BLM for approval prior to implementation.

VEG-9: Special-Status Plant Species Impact Avoidance and Minimization, and Compensation. Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall prepare and implement a VRMP that meets the approval of BLM AO and Riverside County. The Plan shall ensure adequate special-status plant surveys and reporting, avoidance of and mitigation for impacts to special-status plants, and funding or support of a compensatory mitigation program for state or Federally listed species through land acquisition, restoration/enhancement, or a combination of acquisition and restoration/ enhancement.

The Applicant shall implement measures VEG-1 through VEG-8 to avoid, minimize, and compensate for impacts to special status plant species, and shall implement APM BIO-4, including its requirements for salvage of plants meeting the criteria described in the VRMP prior to disturbance, using BLM-approved protocols. In this discussion the term "Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the Project, including the plant site, linear facilities, and areas disturbed by temporary access roads, fence installation, construction work lay-down and staging areas, parking, storage, or by any other activities resulting in disturbance to soil or vegetation.

An experienced botanist knowledgeable in the complex biology of the local flora and consistent with CDFW (2009) and BLM guidelines for surveyor qualifications shall be identified as the Designated Botanist. The name(s) and qualifications of the Designated Botanist(s) shall be submitted to BLM for review and approval.

The Designated Botanist shall oversee compliance with all special status plant avoidance, minimization, and compensation measures described in this condition throughout construction and closure. The Designated Botanist shall oversee and train all other Biological Monitors tasked with conducting botanical survey and monitoring work. All personnel conducting special status plant inventories must have strong backgrounds in plant taxonomy and plant ecology and field sampling design and methods, knowledge of the floras of the inventory area including the special status plant species, and familiarity with natural communities of the area. During operation of the Project, the Designated Botanist shall be responsible for protecting special status plant occurrences within 100 feet of the project boundaries.

A) Special-Status Plant Impact Avoidance and Minimization Measures

Here are the Best Management Practices and other measures designed to avoid accidental impacts to plants occurring outside of the Project Disturbance Area and within 100 feet of the Project Disturbance Area during construction, operation, and decommissioning. The Applicant shall incorporate all measures for protecting special-status plants in close proximity to the site into the BRMIMP (Mitigation Measure VEG-7). These measures shall include the following elements:

a) Site Design Modifications: Incorporate site design modifications to minimize impacts to special-status plants along the Project linears: limiting the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads to preserve the seed bank, and minor adjustments to the alignment of the roads and pipelines within the constraints of the ROW. These modifications shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP.

b) Delineate Environmentally Sensitive Areas (ESAs). Prior to the start of any ground- or vegetation-disturbing activities, a qualified Project biologist shall establish ESAs to protect avoided special-status plants that occur outside of, but within 100 feet of, the Project Disturbance Areas. The locations of ESAs shall be clearly depicted on construction drawings, which shall also include all avoidance and minimization measures on the margins of the construction plans. The boundaries of the ESAs shall be placed a minimum of 20 feet from the occurrence. Where this is not possible due to construction constraints, other protection measures, such as silt-fencing and sediment controls, may be employed to protect the occurrences. Equipment and vehicle maintenance areas, and wash areas, shall be located 100 feet from the upgradient side of any ESAs. ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing or sediment controls under penalty of work stoppages and additional compensatory mitigation. ESAs shall also be clearly identified (with signage or by mapping on site plans) to ensure that avoided plants are not inadvertently harmed during construction, operation, or closure.

c) Special-Status Plant Worker Environmental Awareness Program (WEAP). The WEAP (Mitigation Measure VEG-6) shall include training components specific to protection of special-status plants that may occur in the Project Area.

d) Herbicide and Soil Stabilizer Drift Control Measures. Special-status plant occurrences within 100 feet of the Project Disturbance Area shall be protected from herbicide and soil stabilizer drift. The IWMP (APM BIO-5) shall include measures to minimize potential

for chemical drift or residual toxicity to special-status plants consistent with guidelines outlined in a Pesticide Use Proposal (PUP), such as those provided by the Nature Conservancy's The Global Invasive Species Team (Hillmer and Liedtke 2003), the USEPA, and the Pesticide Action Network Database.

e) Erosion and Sediment Control Measures. Erosion and sediment control measures shall not inadvertently impact special-status plants (e.g., by using invasive or non-native plants in seed mixes, introducing pest plants through contaminated seed or straw, etc.). These measures shall be incorporated in any required Drainage, Erosion, and Sedimentation Control Plans.

f) Monitoring and Reporting Requirements. The Designated Botanist shall conduct weekly monitoring of the ESAs that protect special-status plant occurrences during construction and decommissioning activities.

B) Avoidance Requirements for Special-Status Plants

The Applicant shall avoid impacts to special-status plant populations whenever possible, as described below.

1. Mitigation for special-status plants as defined in Section 3.3.1.3 – Avoidance on Linear Corridors Required: If special-status species as defined in Section 3.3.1.3 are detected within the Project Disturbance Area, the Applicant shall prepare and implement a Vegetation Resources Management Plan (VRMP) that describes measures to avoid and minimize impacts to plant populations on the Project linear corridors and construction laydown areas, unless such avoidance would create greater environmental impacts in other resource areas (e.g. Cultural Resource Sites) or other restrictions (e.g., FAA or other restrictions for placement of transmission poles). The Applicant shall provide compensatory mitigation as described below in Mitigation Measure VEG-9.D for impacts to special-status plants that cannot be avoided. The content of the VRMP and definitions shall be as described as follows:

a. A description of the occurrences of the special-status species on the Project site, ecological characteristics such as micro-habitat requirements, ecosystem processes required for maintenance of the habitat, reproduction and dispersal mechanisms, pollinators, local distribution, and a description of the extent of the population off-site occurrences. Occurrences shall be considered impacted if they are within the Project footprint, and if they would be affected by Project-related hydrologic changes or changes to the local sand transport system.

b. A description of the avoidance and minimization measures that would achieve complete avoidance of occurrences on the Project linear corridors and construction laydown areas, unless such avoidance is infeasible.

c. A description of the measures that would be implemented to avoid or minimize impacts resulting from Project development. Avoidance is generally considered not feasible if the species is located within the Project Disturbance Area (bounded by the tortoise exclusion fence and the drainage channels).

d. If avoidance on the linear corridors, construction laydown areas, and solar facility combined protect less than 75 percent of the local population of the affected species, the Applicant shall implement off-site mitigation that demonstrates that the impacts

will not cause a loss of viability for that species. Implementation of the compensatory off-site mitigation must meet the performance standards described in Mitigation Measure VEG-9.C, below, and may include land acquisition or implementation of a restoration/enhancement program for the species. Compensatory offsite mitigation shall occur outside of a DFA.

e. "Avoidance" shall include protection of the ecosystem processes essential for maintenance of the protected plant occurrence. For all but one of the late blooming plant species with potential to occur, the plant species are annuals that depend on a viable seed bank to maintain population health and persistence. The primary goal of avoidance for these annual species will be protection of the soil integrity and the seed bank that is closely associated with undisturbed soils. Any impacts to the soil structure or surface features will be considered an impact.

2. Preservation of the Germplasm of Affected Special-Status Plants. For all direct impacts to special-status plants, regardless of whether compensatory mitigation is required, mitigation shall include seed collection from the affected special-status plants on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. The seed shall be collected under the supervision or guidance of a reputable seed storage facility such as the Rancho Santa Ana Botanical Garden Seed Conservation Program, San Diego Natural History Museum, or the Missouri Botanical Garden. The costs associated with the long-term storage of the seed shall be the responsibility of the Applicant. Any efforts to propagate and reintroduce special-status plants from seeds in the wild shall be carried out under the direct supervision of specialists such as those listed above and as part of a VRMP, which would include components for habitat restoration and site revegetation, approved by the BLM AO.

C) Off-Site Compensatory Mitigation for Protected Plants

This section describes performance standards for mitigation for a range of options for compensatory mitigation.

Where compensatory mitigation is required under the terms of Mitigation Measure VEG-9.B, above, the Applicant shall mitigate Project impacts with compensatory mitigation. Compensatory mitigation shall consist of acquisition of habitat supporting the species, or restoration/enhancement of populations of the species, and shall meet the performance standards for mitigation described below. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.

The Applicant shall provide funding for the acquisition and/or restoration/ enhancement, initial improvement, and long-term maintenance and management of the acquired or restored lands. The actual costs to comply with this condition will vary depending on the Project Disturbance Area, the actual costs of acquiring compensation habitat, the actual costs of initially improving the habitat, the actual costs of long-term management as determined by a Property Analysis Record (PAR) report, and other transactional costs related to the use of compensatory mitigation.

The Applicant shall comply with other related requirements of this measure, as follows:

I. Compensatory Mitigation by Acquisition: The requirements for the acquisition initial protection and habitat improvement, and long-term maintenance and management of

compensation lands for state and Federally protected plant species include all of the following:

1. Selection Criteria for Acquisition Lands. The compensation lands selected for acquisition may include any of the following three categories:

    a. Occupied Habitat, No Habitat Threats: The compensation lands selected for acquisition shall be occupied by the species and shall be characterized by site integrity and habitat quality that are required to support the species, and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the species on the proposed acquisition lands should be viable, stable or increasing (in size and reproduction).

    b. Occupied Habitat, Habitat Threats. Occupied compensation lands characterized by habitat threats may also be acquired as long as the population could be reasonably expected to recover with habitat restoration efforts (e.g., OHV or grazing exclusion, or removal of invasive non-native plants) and is accompanied by a Habitat Enhancement/Restoration Plan as described in Mitigation Measure VEG-9.C.II, below.

    c. Unoccupied but Adjacent. The Applicant may also acquire habitat for which occupancy by the species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The Applicant shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate, particularly when these restoration efforts will benefit adjacent habitat that is occupied by the species.

2. Review and Approval of Compensation Lands Prior to Acquisition. The Applicant shall submit a formal acquisition proposal to the BLM AO describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above, and must be approved by the BLM AO.

3. Compensation Land Management Plan. The Applicant or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan shall be to support and enhance the long-term viability of the plant occurrences. The Management Plan shall be submitted for review and approval to the BLM AO.

4. Integrating Plant Mitigation with Other Mitigation lands. If all or any portion of the acquired Mojave desert tortoise, Waters of the State, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species' or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for plant mitigation.

5. Compensation Lands Acquisition Requirements. The Applicant shall comply with the following requirements relating to acquisition of the compensation lands after the BLM AO, has approved the proposed compensation lands:

a. Preliminary Report. The Applicant, or an approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the BLM AO. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the BLM AO. For conveyances to the state, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.

b. Title/Conveyance. The Applicant shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the BLM AO. Any transfer of a conservation easement or fee title may be to CDFW or an organization qualified to hold title to and manage compensation lands (pursuant to California Government Code §65965), to BLM, or another public agency approved by the BLM AO. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFW or another entity approved by the BLM AO. If an entity other than CDFW holds a conservation easement over the compensation lands, the BLM AO may require that CDFW or another entity approved by the BLM AO, in consultation with CDFW, be named a third party beneficiary of the conservation easement. The Applicant shall obtain approval of the BLM AO of the terms of any transfer of fee title or conservation easement to the compensation lands.

c. Initial Protection and Habitat Improvement. The Applicant shall fund activities that the BLM AO requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. The costs of these activities are estimated to be $330 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy. A qualified organization, CDFW or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code §65965), if it meets the approval of the BLM AO in consultation with CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

d. Property Analysis Record. Upon identification of the compensation lands, the Applicant shall conduct a PAR or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the BLM AO before it can be used to establish funding levels or management activities for the compensation lands.

e. Long-term Maintenance and Management Funding. In accordance with Mitigation Measure VEG-11 (Phasing), the Applicant shall deposit in the

National Fish and Wildlife Foundation's (NFWF) Renewable Energy Action Team (REAT) Account a non-wasting capital long-term maintenance and management fee in the amount determined through the PAR or PAR-like analysis conducted for the compensation lands.

f. The BLM AO, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

g. Interest, Principal, and Pooling of Funds. The Applicant shall ensure that an agreement is in place with the long-term maintenance and management fund (endowment) holder/manager to ensure the following requirements are met:

   i. Interest. Interest generated from the initial capital long-term maintenance and management fund shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action that is approved by the BLM AO and is designed to protect or improve the habitat values of the compensation lands.

   ii. Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the BLM AO or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.

   iii. Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar non-wasting funds that it holds from other projects for long-term maintenance and management of compensation lands for special-status plants. However, for reporting purposes, the long-term maintenance and management funds for this Project must be tracked and reported individually to the BLM AO.

h. Other Expenses. In addition to the costs listed above, the Applicant shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFW or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.

i. Mitigation Security. The Applicant shall provide financial assurances in accordance with Mitigation Measure VEG-10.2 to the BLM AO to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of

ground-disturbing Project activities. Financial assurances shall be provided to the BLM AO in the form of an irrevocable letter of credit, a pledged savings account or another form of approved security ("Security"). The amount of the Security shall be $2,280 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report. Prior to submitting the Security to the BLM AO, the Applicant shall obtain the BLM AO's approval of the form of the Security. The BLM AO may draw on the Security if the BLM AO determines the Applicant has failed to comply with the requirements specified in this condition. The BLM AO may use money from the Security solely for implementation of the requirements of this condition. The BLM AO's use of the Security to implement measures in this condition may not fully satisfy the Applicant's obligations under this condition, and the Applicant remains responsible for satisfying the obligations under this condition if the Security is insufficient. The unused Security shall be returned to the Applicant in whole or in part upon successful completion of the associated requirements in this condition.

j. The Applicant may elect to comply with the requirements in this condition for acquisition of compensation lands, initial protection and habitat improvement on the compensation lands, or long-term maintenance and management of the compensation lands by funding, or any combination of these three requirements, by providing funds to implement those measures into the REAT Account established with the NFWF. To use this option, the Applicant must make an initial deposit to the REAT Account in an amount equal to the estimated costs (as set forth in the Security section of this condition) of implementing the requirement. If the actual cost of the acquisition, initial protection and habitat improvements, or long-term funding is more than the estimated amount initially paid by the Applicant, the Applicant shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, and the long-term funding requirements as established in an approved PAR or PAR-like analysis. If those actual costs or PAR projections are less than the amount initially transferred by the Applicant, the remaining balance shall be returned to the Applicant.

   The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the BLM AO, in consultation with CDFW, BLM, and USFWS, prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the BLM's certification of the Project.

II. Compensatory Mitigation by Habitat Enhancement/Restoration: As an alternative or adjunct to land acquisition for compensatory mitigation the Applicant may undertake habitat enhancement or restoration for the plant species. Examples of suitable

enhancement projects include but are not limited to the following: i) control unauthorized vehicle use into an occurrence (or pedestrian use if clearly damaging to the species); ii) control of invasive non-native plants that infest or pose an immediate threat to an occurrence; iii) exclude grazing by wild burros or livestock from an occurrence; or iv) restore lost or degraded hydrologic or geomorphic functions critical to the species by restoring previously diverted flows, removing obstructions to the wind sand transport corridor above an occurrence, or increasing groundwater availability for dependent species.

If the Applicant elects to undertake a habitat enhancement project for mitigation, the project must meet the following performance standards: The proposed enhancement project shall achieve rescue of an off-site occurrence that is currently assessed, based on the NatureServe threat ranking system (Master et al. 2009; see also Morse et al. 2004) with one of the following threat ranks: a) long-term decline >30 percent; b) an immediate threat that affects >30 percent of the population, or c) has an overall threat impact that is High to Very High. "Rescue" would be considered successful if it achieves an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").

If the Applicant elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the BLM AO for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall be $2,280 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy for every acre of habitat supporting the plant species which is directly or indirectly impacted by the Project. The amount of the security may be adjusted based on the actual costs of implementing the enhancement, restoration and monitoring. The implementation and monitoring of the enhancement/restoration may be undertaken by an appropriate third party such as NFWF, subject to approval by the BLM AO. The Habitat Enhancement/Restoration Plan shall include each of the following:

1. Goals and Objectives. Define the goals of the restoration or enhancement project and a measurable course of action developed to achieve those goals. The objective of the proposed habitat enhancement plan shall include restoration of a plant occurrence that is currently threatened with a long-term decline. The proposed enhancement plan shall achieve an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").
2. Historical Conditions. Provide a description of the pre-impact or historical conditions (before the site was degraded by weeds or grazing or ORV, etc.), and the desired conditions.
3. Site Characteristics. Describe other site characteristics relevant to the restoration or enhancement project (e.g., composition of native and pest plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species.

4. Ecological Factors. Describe other important ecological factors of the species being protected, restored, or enhanced such as total population, reproduction, distribution, pollinators, etc.
5. Methods. Describe the restoration methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, etc.) and the long-term maintenance required. The implementation phase of the enhancement must be completed within five years.
6. Budget. Provide a detailed budget and time-line, and develop clear, measurable, objective-driven annual success criteria.
7. Monitoring. Develop clear, measurable monitoring methods that can be used to evaluate the effectiveness of the restoration and the benefit to the affected species. The Plan shall include a minimum of five years of quarterly monitoring, and then annual monitoring for the remainder of the enhancement project, and until the performance standards for rescue of a threatened occurrence are met. At a minimum the progress reports shall include: quantitative measurements of the projects progress in meeting the enhancement project success criteria, detailed description of remedial actions taken or proposed and contact information for the responsible parties. In review of the plan, BLM will consider the ability of the proposed activities to support BLM's Long Term Monitoring Strategy for the Riverside East SEZ (BLM 2016).
8. Reporting Program. The Plan shall ensure accountability with a reporting program that includes progress toward goals and success criteria. Include names of responsible parties.
9. Contingency Plan. Describe the contingency plan for failure to meet annual goals.
10. Long-term Protection. Include proof of long-term protection for the restoration site. For private lands this would include conservations easements or other deed restrictions; projects on public lands must be contained in a Desert Wildlife Management Area, Wildlife Habitat Management Area, or other land use protections that will protect the mitigation site and species.

VEG-10: Mitigation for Impacts to Sensitive Riparian Habitat and State Waters. The Applicant shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state and to satisfy requirements of California Fish and Game Code §§1600 and 1607.

1. Acquire Off-Site State Waters: If the Project results in direct impacts to state jurisdictional waters, the Applicant shall acquire, in fee or in easement, a parcel of land, the mitigation ratio of which is to be determined by CDFW based on review of the Streambed Alteration Agreement application. The terms and conditions of this acquisition or easement shall be as described in Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements. Mitigation for impacts to state waters shall occur within the Palo Verde and surrounding watersheds, as close to the Project site as possible. If security is posted in accordance with Provision 2 below (Security for Implementation of Mitigation), the Applicant shall acquire, in fee or in easement, the land, no more than 18 months after the start of Project ground-disturbing activities.

2. Security for Implementation of Mitigation: The Applicant shall provide financial assurances to the BLM AO and CDFW to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of state waters as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the BLM AO and CDFW in the form of an irrevocable letter of credit, a pledged savings account or Security prior to initiating ground-disturbing Project activities. Prior to submittal to the BLM AO, the Security shall be approved by the BLM AO, in consultation with CDFW and the USFWS, to ensure funding. See Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements, for a discussion of the assumptions used in calculating the Security. The Security amounts may change based on land costs or the estimated costs of enhancement and endowment. The final amount due shall be determined by the PAR analysis conducted pursuant to Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements, and approved by the BLM AO and CDFW. The final mitigation acreage is also subject to CDFW concurrence with Project impacts to waters of the state that were developed by the Applicant.

3. Preparation of Compensation Land Management Plan: The Applicant shall submit to the BLM AO and CDFW a draft Management Plan that reflects site-specific enhancement measures for the drainages on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the drainages, and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control.

4. Code of Regulations: The Applicant shall provide a copy of the BRMMP and CDFW permits to all contractors, subcontractors, and the Applicant's Project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFW personnel upon demand. The BLM AO reserves the right to issue a stop work order or allow CDFW to issue a stop work order after giving notice to the Applicant. If the BLM AO in consultation with CDFW, determines that the Applicant has breached any of the terms or conditions or for other reasons, including but not limited to the following:

    a. The information provided by the Applicant regarding streambed alteration is incomplete or inaccurate;

    b. New information becomes available that was not known to it in preparing the terms and conditions; or

    c. The Project or Project activities as described in the Staff Assessment have changed.

5. Best Management Practices: The Applicant shall also comply with the following conditions to protect drainages near the Project Disturbance Area:

    a. The Applicant shall minimize road building, construction activities and vegetation clearing within ephemeral drainages to the extent feasible.

    b. The Applicant shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows.

c. The Applicant shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of the Applicant to ensure compliance.

d. Spoil sites shall not be located at least 30 feet from the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.

e. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from Project-related activities, shall be prevented from contaminating the soil and/or entering waters of the state. These materials, placed within or where they may enter a drainage by the Applicant or any party working under contract or with the permission of the Applicant, shall be removed immediately.

f. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state.

g. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any drainage.

h. No equipment maintenance shall occur within 150 feet of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow.

VEG-11: Project Phasing. The Applicant may provide mitigation as required in multiple phases for distinct construction elements. These phases will generally include installation of fencing, clearing, grubbing and grading, and development of common facilities first, followed by the remaining power block units. All construction activities for the non-linear features during these subsequent phases shall occur within Mojave desert tortoise exclusionary fenced areas that have been cleared in accordance with USFWS protocols.

Prior to initiating each phase of construction the Applicant shall submit the actual construction schedule, a figure depicting the locations of proposed construction and amount of acres to be disturbed. Mitigation acres are calculated based on the compensation requirements for each resource type including Mojave desert tortoise (Mitigation Measure WIL-4), western burrowing owl (Mitigation Measure WIL-9), Mojave fringe-toed lizard (Mitigation Measure WIL-10), and state waters (Mitigation Measure VEG-10). Compensatory mitigation for each phase shall be implemented according to the timing required by each condition.

VEG-12: Monitoring and Research. The Applicant shall provide the BLM and/or its designees access to land within the fenced area of the Desert Quartzite solar energy facility at any time for the purposes of research and monitoring, which may also include the installation of compatible facilities within the project boundaries.

G.4 BIOLOGICAL RESOURCES – WILDLIFE

The following measures shall be implemented to reduce or avoid wildlife species impacts from construction, operation and maintenance, and decommissioning of the Project. Mitigation measures VEG-1 through VEG-8, and VEG-11 are general biological mitigation measures which are applicable to both vegetation and wildlife.

Prior to construction, the following plans required by this section and those required in Section 4.3, *Biological Resources - Vegetation*, shall be prepared and submitted to the appropriate agencies for review and approval:

1. Desert Tortoise Translocation Plan
2. Raven Monitoring and Control Plan
3. Bird and Bat Conservation Strategy
4. Burrowing Owl Mitigation Plan
5. Biological Resources Mitigation, Implementation, and Monitoring Plan
6. PAR for Mojave Fringe-toed Lizard compensation

These plans or programs are explained below in more detail.

WIL-1: Measures to Avoid Take of Mojave Desert Tortoise. The Applicant shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to Mojave desert tortoise. Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling, and other procedures shall be consistent with those described in the USFWS (2009) *Desert Tortoise Field Manual* or more current guidance provided by CDFW and USFWS. The Applicant shall also implement all terms and conditions described in the Biological Opinion prepared by USFWS. The Applicant shall implement the following measures, unless superseded by requirements of the BO.

Preconstruction Survey. Prior to the initiation of construction activities, the Applicant shall conduct a pre-construction survey to determine the number of tortoises that would be affected by Project implementation, in accordance with USFWS (2011b) protocol, and consult with USFWS to confirm the survey results.

Exclusionary Fencing. The Applicant shall erect temporary and/or permanent tortoise exclusionary fencing around active portions of the Project site following the pre-construction tortoise survey. The exclusionary fencing, whether temporary or permanent in nature, shall be installed according to USFWS (2009) protocol, which requires fencing to be buried 12 inches below the ground surface and extending to 22-24 inches above the ground surface. If a phased approach is implemented during the construction phase, the exclusionary fencing may be installed in phases, with pre-construction surveys conducted prior to and clearance surveys conducted immediately after installation of the exclusionary fence. The Applicant shall also ensure that tortoise exclusionary fencing is maintained during the decommissioning phase to keep tortoises from accessing active work areas. Throughout the construction and decommissioning phases, the tortoise exclusionary fence shall be checked regularly per item 4

below, and repaired (if necessary) to ensure its integrity. If a tortoise is encountered along the inside or outside of the fence, an Authorized Biologist shall capture it in accordance with USFWS (2009: Chapter 7) and DTC (1999) protocols, perform a health assessment in accordance with USFWS (2013) guidelines, attach a radio transmitter to the tortoise in accordance with USFWS (2009) and Boarman et al. (1998) protocols, and release the tortoise in a previously identified Project-adjacent relocation areas supporting tortoise habitat in accordance with USFWS (2011b) protocol. Temporary exclusionary fencing shall be removed following completion of the construction and decommissioning phases.

The Applicant shall ensure that the Project's perimeter security fence includes exclusionary fencing that prevents Mojave desert tortoises and other burrowing animals from accessing the Project site. The exclusionary fencing shall be installed at the base of the security fence according to USFWS (2009) specifications, and cattle guards shall be installed at entrances to the Project, also according to USFWS (2009) protocol.

All fencing installation corridors shall be flagged to assist biologists in studying the fence route and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the Mojave desert tortoise exclusionary fence and utility rights- of-way alignments shall be conducted using techniques outlined in the USFWS' 2009 *Desert Tortoise Field Manual*. Prior to the surveys the Applicant shall provide to the BLM Authorized Officer (BLM AO), CDFW, USFWS, and the County a figure clearly depicting the limits of construction disturbance for the proposed fence installation.

1. *Timing, Supervision of Fence Installation.* The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.
2. *Fence Material and Installation.* All Mojave desert tortoise exclusionary fencing shall be constructed in accordance with the USFWS' Desert Tortoise Field Manual (2009, Chapter 8 – Desert Tortoise Exclusion Fence).
3. *Security Gates.* Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. Tortoise guards shall be installed at gate locations.
4. *Fence Inspections.* Following installation of the Mojave desert tortoise exclusion fencing, the fencing shall be regularly inspected during construction, operations, and decommissioning. If tortoise were moved out of harm's way during fence construction, fencing shall be inspected daily for the first 7 days to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, fencing shall be inspected quarterly and during and within 24 hours following major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of site fencing shall occur for the life of the Project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.

Mojave Desert Tortoise Clearance Surveys within the Plant Site. Clearance surveys shall be conducted in accordance with the USFWS (2011b) protocol and USFWS-approved Desert Tortoise Translocation Plan. Clearance surveys of the site may only be conducted when tortoises are most active in the Project vicinity (March through May or September through mid-November). Clearance surveys of linear features may be conducted during anytime of the year. Surveys outside of the active season within the solar plant site require approval by USFWS and CDFW. Any tortoise located during clearance surveys of the power plant site and linear features shall be relocated and monitored in accordance with the Desert Tortoise Translocation Plan.

Burrow Searches. During clearance surveys all Mojave desert tortoise burrows, and burrows constructed by other species that might be used by Mojave desert tortoises, shall be examined by the Designated Biologist, who may be assisted by the Biological Monitors, to assess occupancy of each burrow by Mojave desert tortoises and handled in accordance with the *Desert Tortoise Field Manual*. To prevent reentry by a tortoise or other wildlife, all burrows shall be collapsed once absence has been determined, but only on the last survey pass and if not occupied by other wildlife. Tortoises taken from burrows and from elsewhere on the power plant site shall be relocated or translocated as described in the Desert Tortoise Translocation Plan.

Burrow Excavation/Handling. All potential Mojave desert tortoise burrows located during clearance surveys would be excavated by hand, tortoises removed, and collapsed or blocked to prevent occupation by Mojave desert tortoises. All Mojave desert tortoise handling and removal, and burrow excavations, including nests, would be conducted by the Designated Biologist, who may be assisted by a Biological Monitor in accordance with the *Desert Tortoise Field Manual*.

Monitoring Following Clearing. Following the Mojave desert tortoise clearance and removal from the power plant site and utility corridors, workers and heavy equipment shall be allowed to enter the Project site to perform clearing, grubbing, leveling, and trenching. A Designated Biologist shall directly monitor site clearing and shall be onsite during grading activities to find and move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Desert Tortoise Translocation Plan.

Reporting. The Designated Biologist shall record the following information for any Mojave desert tortoises handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether Mojave desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled Mojave desert tortoise as described in the paragraph below. Mojave desert tortoise moved from within Project areas shall be marked and monitored in accordance with the Desert Tortoise Translocation Plan (Mitigation Measure WIL-2).

Avoidance – Construction. During the construction of linear features (fencing, transmission lines, and access roads), all live tortoises and active burrows shall be avoided to the extent possible. The Applicant shall ensure that an Authorized Biologist or Biological Monitor under their supervision monitors any Project activities in unfenced areas for presence of tortoises. If an active burrow cannot be avoided by construction activities, the burrow shall be excavated using protocols in USFWS Desert Tortoise Field Manual (USFWS 2009). If a tortoise wanders into an unfenced, active work area, does not leave the area on its own accord, and cannot be avoided by

Project activities, the Applicant shall ensure that an Authorized Biologist captures the tortoise, implements a health assessment of the tortoise, relocates it to previously identified appropriate Project-adjacent habitat away from any active, unfenced work areas, and monitor the individual via telemetry, in accordance with USFWS (2011) protocol. The Authorized Biologist or Biological Monitor shall have a copy of all measures, including the BO, when monitoring Project activities. The Authorized Biologist or Biological Monitor shall have the authority to halt all non-emergency activities that are in violation of the measures. Work shall proceed only after hazards to Mojave desert tortoise are removed, the species is no longer at risk, or the individual has been moved from harm's way by an Authorized Biologist. A compliance report shall be submitted to the BLM and USFWS annually.

Avoidance – Operations and Maintenance. The Applicant shall ensure that an Authorized Biologist or Biological Monitor under their supervision monitors any Project activities in unfenced areas for presence of tortoises during the O&M phase. If a tortoise wanders into an unfenced, active work area, does not leave the area on its own accord, and cannot be avoided by Project activities, the Applicant shall ensure that an Authorized Biologist captures the tortoise, implements a health assessment of the tortoise, relocates it to previously identified appropriate Project-adjacent habitat away from any active, unfenced work areas, and monitor the individual via telemetry, in accordance with USFWS (2011) protocol. The Authorized Biologist or Biological Monitor shall have a copy of all measures, including the BO, when monitoring Project activities. The Authorized Biologist or Biological Monitor shall have the authority to halt all non-emergency activities that are in violation of the measures. Work shall proceed only after hazards to Mojave desert tortoise are removed, the species is no longer at risk, or the individual has been moved from harm's way by an Authorized Biologist. A compliance report shall be submitted to the BLM and USFWS annually.

WIL-2: Mojave Desert Tortoise Translocation Plan. If the pre-construction survey determines that more than 5 tortoises are located on the Project site, the Applicant shall identify an off-site translocation site that is depleted of tortoises, where tortoises may be translocated in accordance with USFWS (2011b) protocol. The Applicant shall ensure that each proposed translocation site is surrounded by appropriate habitat with a 6.5 km radius in accordance with USFWS (2011b) protocol. The Applicant shall also identify areas of appropriate tortoise habitat directly adjacent to the Project site where tortoises may be relocated in accordance with USFWS (2011b) protocol.

Prior to ground disturbance, a Desert Tortoise Translocation Plan shall be prepared for the Project that provides details for conducting translocation of tortoises to off-site translocation areas or relocation of tortoises to near-site relocation areas. The purpose of the plan is to describe the process of translocation, minimize mortality of Mojave desert tortoises, and assess the effectiveness of the translocation effort through a long-term monitoring program. If more than 5 tortoises are discovered in the Project site during the clearance survey, the Applicant shall implement health assessments of the tortoises, translocate them to previously identified off-site translocation sites, and monitor them via telemetry, in accordance with USFWS (2011b) protocol. If one to five tortoises are discovered in the Project site during the clearance survey, the Project proponent shall implement health assessments of the tortoises, relocate them to previously identified Project-adjacent areas, and monitor them via telemetry, in accordance with USFWS (2011b) protocol.

WIL-3: Project Notifications and Reporting. The Applicant shall provide BLM staff with reasonable access to the Project site and compensation lands under the control of the Applicant and shall otherwise fully cooperate with BLM's efforts to verify the Project owner's compliance with, or the effectiveness of, mitigation measures. The Project's Designated Representative, in consultation with the Project's Designated Biologist shall notify the BLM AO at least 14 calendar days before initiating construction-related ground disturbance activities; immediately notify the BLM AO in writing if the Applicant is not in compliance with any required conditions of Project approval, including but not limited to any actual or anticipated failure to implement mitigation measures within the specified time periods. The Project's Designated Biologist shall:

a. ***Monitoring During Grubbing and Grading.*** Remain onsite daily while vegetation salvage, grubbing, grading and other ground-disturbance construction activities are taking place to avoid or minimize take of listed species, to check for compliance with all impact avoidance and minimization measures, and to check all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protective zones.

b. ***Monthly Inspections.*** Conduct inspections at a minimum of once per month after clearing, grubbing, and grading are completed and submit a monthly report to the Project's Designated Representative for their submittal to the BLM AO, USFWS, County, and/or CDFW during construction.

1) ***Notification of Injured, Dead, or Relocated Listed Species.*** In the event of an unauthorized take of a listed species in an active construction area (e.g., with equipment, vehicles, or workers), the BLM AO, CDFW, and USFWS shall be notified immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species. Written follow-up notification via FAX or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant:

- *Injured Desert Tortoise.* If a Mojave desert tortoise is injured as a result of Project-related activities during construction, the Designated Biologist shall immediately take it to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the Applicant. Following phone notification as required above, the BLM AO, CDFW, and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, location, circumstances of the incident, and the name of the facility where the animal was taken.

- *Desert Tortoise Fatality.* If a Mojave desert tortoise is killed by Project-related activities during construction or operation, submit a written report with the same information as an injury report. These Mojave desert tortoises shall be salvaged according to guidelines described in the USGS publication *Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoise.* The Applicant shall pay to have the Mojave desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.

c. ***Stop Work Order.*** The BLM AO may issue the Applicant a written stop work order to suspend any activity related to the construction or operation of the Project to prevent or remedy a violation of one or more required conditions of Project approval (including but not limited to failure to comply with reporting or monitoring) or to prevent the illegal take of an endangered, threatened, or candidate species. The Applicant shall comply with the stop work order immediately upon receipt thereof.

WIL-4: Compensatory Mitigation for Desert Tortoise Habitat Losses. To fully mitigate for habitat loss and potential take of Mojave desert tortoise, the Applicant shall provide compensatory mitigation at a 1:1 ratio for impacts to 3,760 acres (consisting of all vegetation alliances, but not including disturbed/developed) within the Alternative 1 footprint, adjusted to reflect the final footprint of the selected Project alternative. For the purposes of this measure, the Project footprint means all lands directly disturbed in the construction and operation of the Project, including all linear features, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long- term habitat for the Mojave desert tortoise. To satisfy this measure, the Applicant shall acquire, protect and transfer 1 acre of Mojave desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. The Applicant has another option for satisfying some or all of the requirements in this measure, in lieu of acquiring lands itself. The Applicant may satisfy the requirements of this measure by depositing funds into the REAT Account established with the NFWF, as provided below in section 3.h. of this measure. The legal authority of the in lieu fee option is outlined in WIL-11.

The timing of the mitigation shall correspond with the timing of the site disturbance activities. However, if security is posted in accordance with 3.g. below (Mitigation Security), the Applicant shall acquire the land, in fee or in easement, within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.

If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:

1. ***Selection Criteria for Compensation Lands.*** The compensation lands selected for acquisition in fee title or in easement shall:
   a. be within the Chuckwalla Critical Habitat Unit or, if sufficient land is unavailable, in other locations within the Colorado Desert Recovery Unit;
   b. be located outside of a DFA;
   c. provide habitat for Mojave desert tortoise with capacity to regenerate naturally when disturbances are removed;
   d. be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
   e. be connected to lands with Mojave desert tortoise habitat equal to or better quality than the Project site, ideally with populations that are stable, recovering, or likely to recover;

f. not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;

g. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;

h. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and

i. have water and mineral rights included as part of the acquisition, unless the BLM AO, in consultation with CDFW and USFWS, agrees in writing to the acceptability of land.

2. ***Review and Approval of Compensation Lands Prior to Acquisition.*** The Applicant shall submit a formal acquisition proposal to the BLM AO, CDFW, and USFWS describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for Mojave desert tortoise in relation to the criteria listed above. Approval from the BLM AO and CDFW, in consultation with BLM and the USFWS, shall be required for acquisition of all compensatory mitigation parcels.

3. ***Compensation Lands Acquisition Requirements.*** The Applicant shall comply with the following requirements relating to acquisition of the compensation lands after the BLM AO and CDFW, in consultation with BLM and the USFWS, have approved the proposed compensation lands:

a. *Preliminary Report.* The Applicant, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the BLM AO and CDFW. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the BLM AO and CDFW, in consultation with the USFWS. For conveyances to the state, approval may also be required from the California Department of General Services, the Fish and Game Commission, and the Wildlife Conservation Board.

b. *Title/Conveyance.* The Applicant shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, shall require that both types of transfers be completed. Any transfer of a conservation easement or title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code §65965), or to BLM under terms approved by the BLM AO and CDFW. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFW in a form approved by CDFW. If an approved non-profit holds a conservation easement, CDFW shall be named a third party beneficiary.

c. *Initial Habitat Improvement Fund.* The Applicant shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code §65965) and if it meets the approval of CDFW and the BLM AO. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

d. *Property Analysis Record.* Upon identification of the compensation lands, the Applicant shall conduct a PAR or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.

e. *Long-term Maintenance and Management Fund.* The Applicant shall deposit in NFWF's REAT Account a non-wasting capital long-term maintenance and management fee in the amount determined through the PAR analysis conducted for the compensation lands.

   The BLM AO, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

f. *Interest, Principal, and Pooling of Funds.* The Applicant, the BLM AO and CDFW shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

   i. Interest. Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.

   ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFW or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.

   iii. Pooling Long-Term Maintenance and Management Fee Funds. CDFW, or a BLM AO- and CDFW-approved non-profit organization qualified to hold long- term

maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for local populations of Mojave desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and BLM AO.

iv. Other expenses. In addition to the costs listed above, the Applicant shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs, expenses incurred from other state agency reviews, and overhead related to providing compensation lands to CDFW or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.

g. *Mitigation Security.* The Applicant shall provide financial assurances to the BLM AO and CDFW with copies of the document(s) to the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described herein. These funds shall be used solely for implementation of the measures associated with the Project in the event the Applicant fails to comply with the requirements specified in this measure, or shall be returned to the Applicant upon successful compliance with the requirements in this measure. The BLM AO's or CDFW's use of the security to implement required measures may not fully satisfy the Applicant's obligations under this condition. Financial assurance can be provided to the BLM AO and CDFW in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the BLM AO, the Applicant shall obtain the BLM AO's and CDFW's approval, in consultation with the USFWS, of the form of the Security. Security shall be provided in the amounts calculated as follows:

   i. land acquisition costs for compensation land, calculated at $500/acre.

   ii. initial protection and improvement activities on the compensation land, calculated at $330/acre.

   iii. Long term maintenance and management fee, calculated at $1,450 an acre.

   The amount of security shall be adjusted for any change in the Project footprints for each phase as described above.

h. The Applicant may elect to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the security required in 3.g., above, and may be provided in lieu of security. If this option is used for the acquisition and initial improvement, the Applicant shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual costs are known. If the actual costs for acquisition and administrative costs and fees are less than $500 an acre, the excess money deposited in the REAT Account shall be returned to the

Applicant. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the Applicant.

The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a private or non-governmental organization, by written agreement of the BLM AO and CDFW. Such delegation shall be subject to approval by the BLM AO and CDFW, in consultation with the USFWS, prior to land acquisition, initial protection or maintenance and management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be implemented within 18 months of the BLM's approval.

WIL-5: Raven Management Plan. A Raven Management Plan shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit. The Raven Management Plan shall address Project characteristics and activities that may attract or subsidize common ravens. The Raven Management Plan shall include measures designed to: 1) minimize attracting and subsidizing ravens, 2) provide education to Project personnel, 3) remove raven nests and offending ravens, and 4) implement adaptive management. The Applicant shall also provide funding for implementation of the USFWS Regional Raven Management Program, as described below.

1. The Raven Plan shall:
    a. Identify conditions associated with the Project that might provide raven subsidies or attractants;
    b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;
    c. Describe control practices for ravens;
    d. Establish thresholds that would trigger implementation of control practices;
    e. Address monitoring and nest removal during construction and for the life of the Project, and;
    f. Discuss reporting requirements.
2. USFWS Regional Raven Management Program: The Applicant shall submit payment to the Project sub-account of the REAT Account held by NFWF to support the USFWS Regional Raven Management Program. The one-time fee shall be as described in the cost allocation methodology or more current guidance as provided by USFWS or CDFW. The contribution to the regional raven management plan will be $105 per acre impacted.

WIL-6: Bird and Bat Conservation Strategy. Prior to the Notice to Proceed, the Applicant shall finalize and implement their draft BBCS to include the following:

- Describe baseline conditions for bird and bat species present within the Project site, including results of site-specific surveys.
- Assess potential risk to bird and bats based on the proposed activities.
- Specify conservation measures that will be employed to avoid, minimize, and/or mitigate any potential adverse effects to these species.

- Describe the incidental monitoring and reporting that will take place during construction.
- Provide details for avian and bat post-construction monitoring and reporting.
- Specify the adaptive management process that will be used to address potential adverse effects on these species.
- Monitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), and the solar field.
- The monitoring data shall be used to inform a management program that would avoid and minimize Project-related avian and bat impacts. The study design shall be approved by the BLM AO in consultation with USFWS, and shall be incorporated into the Project's Biological Resources Mitigation, Implementation, and Monitoring Plan (BRMIMP; see Mitigation Measure VEG-7) and implemented.
- Post-construction mortality monitoring will be required for a minimum of two years, including the following project components: PV solar panel arrays (40% survey coverage per year), perimeter fencing (100% survey coverage per year), and the gen-tie line (50% survey coverage per year).

The Applicant shall provide analysis to BLM evaluating the feasibility of using tanks instead of ponds for water storage. Ponds shall not be used unless specifically approved by the Authorized Officer.

The applicant shall follow APLIC guidelines for avian protection on powerlines and shall use current guidelines to reduce bird mortality from collision and electrocution with powerlines. The APLIC (2006) and USFWS recommend the following:

1. Provide 60-inch minimum horizontal separation between energized conductors or energized conductors and grounded hardware;
2. Insulate hardware or conductors against simultaneous contact if adequate spacing is not possible;
3. Use structure designs that minimize impacts to birds; and
4. Shield wires to minimize the effects from bird collisions.

WIL-7: Pre-Construction Nest Surveys. Prior to ground disturbance activities (such as initial grading or mowing activity), pre-construction nest surveys for all migratory birds shall be conducted if construction activities would begin from February 1 through August 31. For construction work within 500 feet of Bendire's thrasher suitable habitat, pre-construction surveys shall be conducted prior to work from March 1 to September 30.

The qualified biologists conducting the surveys shall be experienced bird surveyors familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). The goal of the nesting surveys shall be to identify the general location of the nest sites, sufficient to establish a protective buffer zone around the potential nest site, and need not include identification of the precise nest locations. The bird surveyors shall perform surveys in accordance with the following guidelines:

1. Surveys shall cover all potential nesting habitat areas, including the Blue paloverde-Desert Ironwood vegetation that could be disturbed by each phase of grading. Surveys shall also include areas within 200 feet of the boundaries of the active construction areas (including linear facilities);
2. Pre-construction surveys for nesting birds shall be conducted within a 14-day period preceding initiation of grading or mowing activity. Workers shall be trained in the WEAP training to identify and report nests in active construction areas, additional follow-up surveys may be required if periods of construction inactivity exceed 3 weeks, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;
3. If active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the qualified biologist) and monitoring plan shall be developed. Nest locations shall be mapped and submitted, along with a report stating the survey results, to the BLM AO; and
4. The qualified biologist shall monitor the nest until he or she determines that nestlings have fledged; activities that might, in the opinion of the monitors, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made.

WIL-8: American Badger and Desert Kit Fox Protection. The Applicant shall implement the following measures to avoid direct impacts to American badgers and desert kit fox:

1. ***Prepare Desert Kit Fox Management Plan*:** At least 45 days prior to construction, the Applicant shall prepare a Desert Kit Fox Management Plan that: 1) incorporates baseline desert kit fox census findings into a cohesive management strategy that minimizes disease risk to kit fox populations; 2) specifically identifies preconstruction survey methods for kit foxes and large carnivores (e.g., badgers) in the Project area; 3) describes preconstruction and construction-phase relocation methods from the site, including the possibility for passive relocation from the site (and outlines identified CDFW permit and MOU requirements for active relocation), and; 4) coordinates survey findings prior to and during construction to meet the information needs of wildlife health officials in monitoring the health of kit fox populations. The Plan shall include contingency measures that would be performed if canine distemper were documented in the Project area or in potential relocation areas, and measures to address potential kit fox reoccupancy of the site (as documented at the Genesis site). The contents and requirements of the Plan shall be subject to review and approval by the BLM AO in consultation with USFWS and CDFW.
2. ***Implement Desert Kit Fox Management Plan:***
    a. *Pre-Construction Surveys:* Biological Monitors shall conduct pre-construction surveys for desert kit fox and American badger no more than 30 days prior to initiation of construction activities. Surveys shall also consider the potential presence of active dens within 100 feet of the project boundary (including utility corridors and access roads) and shall be performed for each phase of construction. If dens are detected each den shall be classified as inactive, potentially active, or definitely active.

b. Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox.

c. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance.

d. If no tracks are observed in the tracking medium or no photos of the species are captured after three nights, the den shall be excavated and backfilled by hand.

e. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. BLM approval may be required prior to release of badgers on public lands.

f. If an active natal den (a den with pups) is detected on the site, as demonstrated by the procedures specified in paragraph c above, the BLM AO and CDFW shall be contacted within 24 hours to determine the appropriate course of action to minimize the potential for animal harm or mortality. The course of action would depend on the age of the pups, location of the den on the site (e.g., is the den in a central area or in a perimeter location), status of the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around all active natal dens.

g. The following measures are required to reduce the likelihood of distemper transmission:

    i. No pets shall be allowed on the site prior to or during construction, with the possible exception of kit fox scat detection dogs during preconstruction surveys, and then only with prior CDFW approval;

    ii. Any kit fox hazing activities that include the use of animal repellents such as coyote urine must be cleared through CDFW prior to use, and;

    iii. Any sick or diseased kit fox, or documented kit fox mortality shall be reported to CDFW and the BLM AO within 24 hours of identification. If a dead kit fox is observed, it shall be retained and protected from scavengers until CDFW determines if the collection of necropsy samples is justified.

WIL-9: Burrowing Owl Protection and Mitigation. The Applicant shall implement the following measures to avoid, minimize and offset impacts to burrowing owls:

1. ***Pre-Construction Surveys*:** The Qualified Biologist or Biological Monitor shall conduct pre-construction surveys for burrowing owls no more than 30 days and no less than 14 days prior to start of construction. Surveys shall be focused exclusively on detecting burrowing owls, and shall be conducted from two hours before sunset to one hour after sunrise.

2. ***Implement Burrowing Owl Mitigation Plan*:** If burrowing owls are documented during the preconstruction surveys, the Applicant shall prepare and implement a final Burrowing

Owl Mitigation Plan that is consistent with guidance provided in the CDFW (2012) *Staff Report on Burrowing Owl Mitigation*. The Plan shall be approved by the BLM AO in consultation with USFWS and CDFW, and shall identify appropriate off-site areas for creation or enhancement of burrows to support passive relocation of burrowing owls, provide details for implementing the passive burrow exclusion and relocation of burrowing owls from the Project site, and specify reporting protocol for any implemented burrowing owl mitigation measures. Active translocation may be considered, in consultation with CDFW.

3. ***Implement Avoidance Measures:*** If an active burrowing owl burrow is detected within 656 feet from the Project disturbance area the following avoidance and minimization measures shall be implemented:

   a. Establish Non-Disturbance Buffer: Caution tape shall be installed at a 250-foot radius from the occupied burrow to create a non-disturbance buffer around the burrow. The non-disturbance buffer and caution tape line may be reduced to 160 feet if all Project-related activities that might disturb burrowing owls would be conducted during the non-breeding season (September 1st through January 31st). Signs shall be posted in English and Spanish at the fence line indicating no entry or disturbance is permitted within the fenced buffer. The appropriateness of buffer distances shall be carefully reassessed and relaxed or modified, on a case-by-case based on a review by the Qualified Biologist, and shall depend on existing conditions (e.g., vegetation/topographic screening and current disturbance regimes) and/or future development plans (e.g., increased or intensified construction activities.

   b. Monitoring: If construction activities would occur within 656 feet of the occupied burrow during the nesting season (February 1 to August 31st) the Qualified Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall make recommendations to minimize or avoid such disturbance.

4. ***Acquire Compensatory Burrowing Owl Habitat*:** If preconstruction surveys determine the presence of burrowing owls that would be impacted by the Project, consistent with CDFW mitigation guidance (CBOC 1993) the Applicant shall acquire, in fee or in easement, land suitable to support a resident population of burrowing owls and shall provide funding for the enhancement and long-term management of these compensation lands based on 6.5 acres per pair or individual bird documented during the preconstruction survey as anticipated to be impacted by the Project. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the BLM AO, in consultation with CDFW prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat.

   a. *Criteria for Burrowing Owl Mitigation Lands:* The terms and conditions of this acquisition or easement shall be as described in Mitigation Measure Mitigation

Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements, with the additional criteria to include: 1) the mitigation land must provide suitable habitat for burrowing owls, and 2) the acquisition lands must either currently support burrowing owls or be no farther than 5 miles from an active burrowing owl nesting territory. The burrowing owl mitigation lands may be included with the Mojave desert tortoise mitigation lands ONLY if these two burrowing owl criteria are met. If the burrowing owl mitigation land is separate from the acreage required for Mojave desert tortoise compensation lands, the Applicant shall fulfill the requirements described below in this measure.

b. *Security:* If the burrowing owl mitigation land is separate from the acreage required for Mojave desert tortoise compensation lands, the Applicant or an approved third party shall complete acquisition of the proposed compensation lands within the time period specified for this acquisition (see the verification section at the end of this measure). Alternatively, financial assurance can be provided by the Applicant to the BLM AO and CDFW, according to the measures outlined in Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the BLM AO in the form of an irrevocable letter of credit, a pledged savings account, or another form of security ("Security") prior to initiating ground-disturbing Project activities. Prior to submittal, the Security shall be approved by the BLM AO in consultation with CDFW and the USFWS to ensure funding. The final amount due shall be determined by an updated appraisal and PAR analysis conducted as described in Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements.

WIL-10: Compensatory Mitigation for Mojave Fringe-toed Lizard Habitat Losses. To mitigate for permanent habitat loss and direct impacts to Mojave fringe-toed lizards, the Applicant shall provide compensatory mitigation at a 3:1 ratio, which may include compensation lands purchased in fee or in easement in whole or in part, for impacts to Mojave fringe-toed lizard habitat, as required by the NECO Plan Amendment to the CDCA Plan (BLM 2002). Without this mitigation, the project would not be consistent with the land use plan, with which BLM is required to comply. If compensation lands are acquired, the Applicant shall provide funding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.

1. ***Criteria for Compensation Lands*:** The compensation lands selected for acquisition shall:

   a. Be deposits of eolian or fine windblown sands typically associated with dunes, washes, hillsides, margins of dry lakes, and sandy hummocks within the McCoy Valley or Chuckwalla Valley, outside of DFAs, with potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat;

   b. To the extent feasible, be connected to lands currently occupied by Mojave fringe-toed lizard;

c. To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;

d. Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed;

e. Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible;

f. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;

g. Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat;

h. Not be subject to property constraints (i.e. mineral leases, cultural resources); and

i. Be on land for which long-term management is feasible.

2. ***Security for Implementation of Mitigation*:** The Applicant shall provide financial assurances to the BLM AO to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of Mojave fringe-toed lizard habitat as described in this measure. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the BLM AO according to the measures outlined in Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements. The final amount due shall be determined by an updated appraisal and a PAR analysis conducted as described in Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements.

3. ***Preparation of Compensation Land Management Plan*:** The Applicant shall submit to the BLM AO, CDFW and USFWS a draft Management Plan that reflects site-specific enhancement measures for the Mojave fringe-toed lizard habitat on the acquired compensation lands. The objective of the Management Plan shall be to enhance the value of the compensation lands for Mojave fringe-toed lizards, and may include enhancement actions such as weed control, fencing to exclude livestock, erosion control, or protection of sand sources or sand transport corridors.

WIL-11: In-Lieu Fees to Satisfy Compensation Requirements. The Applicant may choose to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to California Fish and Game Code §§2069 and 2099 or any other applicable in-lieu fee provision, to the extent the in-lieu fee provision is found by the California Department of Fish and Wildlife to mitigate the impacts identified herein.

WIL-12: Couch's Spadefoot Toad Protection and Mitigation. Prior to ground disturbance, the Applicant shall prepare and implement a Couch's Spadefoot Toad Protection and Mitigation Plan (Protection and Mitigation Plan) to avoid, minimize or mitigate impacts to Couch's spadefoot toads and their breeding habitat during construction, operation, and decommissioning of the Project. The Protection and Mitigation Plan shall be approved by BLM's Authorized Officer in

consultation with CDFW, and shall be incorporated into the Project's BRMIMP and implemented. The Protection and Mitigation Plan shall include avoidance, minimization, and mitigation measures that would be required if occupied habitat is found during habitat surveys. The Protection and Mitigation Plan shall include, at a minimum:

1. Habitat Survey Results: a. Survey methodology; b. Survey results, including a detailed discussion of potential breeding sites, and a description of areas determined not to include breeding habitat; and c. Figures showing the areas surveyed and the location of potential breeding habitat in relation to proposed Project features.

2. Impacts Assessment from: a. Habitat disturbance from construction; b. Noise from construction, operations, and potential ORV traffic; c. Increased access for vehicles from road construction or improvements; d. Changes in breeding habitat due to changes in flow levels and flow patterns to breeding ponds; e. Increased traffic from construction and operations; f. Increased risk of predation.

3. Avoidance and Minimization Measures: a. Description of measures that would be implemented to avoid impacts to potential breeding ponds, such as design strategies; protective fencing or other barriers, worker's education, minimizing construction traffic within the vicinity of breeding ponds, and biological monitoring; b. Designation of a Management Area around breeding ponds that includes an appropriate upland buffer, and a description of measures used to minimize impacts to within this buffer.

4. Mitigation: If complete avoidance of breeding sites identified during surveys is not possible, the plan shall include plans to create additional breeding habitats (ephemeral pond) at least equal in area to the acreage of ponds being impacted.

WIL-13: Development of Ponding Area. The Applicant would use temporary water tanks. Should the applicant find developing water tanks infeasible, the applicant would provide the BLM Authorized Officer with written request with justification why water tanks are infeasible prior to implementing onsite ponds. The written request would also include relevant measures to avoid attracting wildlife.

G.5 CULTURAL RESOURCES

The following Project-specific mitigation measures were developed to reduce and/or avoid potential impacts associated with cultural resources.

CULTURAL-1: NHPA §106 Memorandum of Agreement. The BLM's execution of an MOA for the proposed undertaking in accordance with the requirements of §106 of the NHPA will lead to avoidance, minimization, or mitigation of potential adverse effects to historic properties. The BLM shall prepare the MOA in consultation with the ACHP, SHPO, the Applicant, Riverside County, Native American Tribes, and other identified consulting parties. The MOA will be binding on the Applicant and the proposed undertaking. An executed MOA represents the BLM's completion of the NHPA §106 process. The MOA must be executed prior to the ROD.

The MOA will contain measures to avoid, minimize, and mitigate adverse effects to historic properties and detail the process for activities to proceed in areas where historic properties are

not now known to exist; procedures for treatment of unanticipated effects and post-review discoveries; recognition that BLM will comply with NAGPRA; compliance monitoring; dispute resolution; and tribal participation. Resolution of adverse effects to historic properties will be developed in consultation and may include research and documentation, data recovery excavations, curation, public interpretation, or use or creation of historic contexts.

In addition, a Plan for Archaeological Monitoring, Post-Review Discoveries, and Unanticipated Effects (also referred to a Monitoring and Discovery Plan or MDP) shall be prepared, appended to the MOA, and implemented and shall contain procedures to avoid, minimize, and mitigate effects to historic properties, and could include measures similar to the following:

1. Avoidance of cultural resources is the preferred mitigation measure. On the basis of preliminary NRHP eligibility assessments, existing NRHP eligibility determinations, or CRHR eligibility assessments, the BLM may require the relocation of Project components to avoid or reduce damage to cultural resource values. Where operationally feasible, potentially NRHP- or CRHR-eligible resources shall be protected from direct Project impacts by Project redesign within previously surveyed and analyzed areas.
2. Where NRHP- or CRHR-eligible or -listed historic properties cannot be protected from direct effects by Project redesign, the Applicant shall comply with appropriate mitigative treatment(s) that will be detailed in the HPTP. An example of treatment is data recovery at affected sites.
3. All NRHP-listed or eligible cultural resources and all CRHR-listed, eligible, and unevaluated cultural resources being treated as eligible (as determined by the BLM) that will not be affected by direct impacts, but are within 50 feet of Project construction activities, shall be monitored during ground disturbing activities by a qualified archaeologist. Protective fencing or other markers, at the BLM's discretion, shall be erected and maintained to protect these resources from inadvertent trespass for the duration of construction in the vicinity.

CULTURAL-2: Historic Properties Treatment Plan (HPTP). Where NRHP- or CRHR-eligible or -listed historic properties cannot be protected from indirect effects by Project redesign, the Applicant shall comply with appropriate mitigative treatment(s) that will be detailed in a HPTP to be prepared for the Project prior to issuance of the NTP or a County Grading Permit. Indirect impacts include, but are not limited to visual effects, auditory effects, increased awareness of the sites, and increased traffic within the area. Treatment of the sites for indirect impacts may include complete recordation or updates of sites, field checks or long term monitoring, and rerouting of access roads near sites.

CULTURAL-3: Identification of Human Remains. For human remains discovered on BLM land, the process for securing the site, notification of responsible parties, and subsequent actions shall be identified in the MDP required by Mitigation Measure CULTURAL-5. The actions to be identified include consultation with Native Americans if appropriate and actions to comply with NAGPRA (25 U.S.C.§ 3001) relative to handling of Native American cultural items such as human remains, funerary objects, sacred objects, or objects of cultural patrimony.

For human remains encountered on private lands, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin. Further, pursuant to PRC Section 5097.98(b), remains shall be left in place

and free from disturbance until a final decision as to treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the NAHC shall be contacted within the period specified by law. The NAHC shall identify the "Most Likely Descendant," who shall then make recommendations to and engage in consultation with the County and property owner concerning the treatment of the remains as provided in PRC Section 5097.98. The landowner may reach an agreement with the Most Likely Descendant for treating and disposing of human remains pursuant to state CEQA Guidelines Section 15064.5(d). Human remains from other ethnic/cultural groups with recognized historical associations to the Project area shall also be subject to consultation between appropriate representatives from that group and the County Archaeologist.

CULTURAL-4: Unanticipated Discoveries. If, during ground disturbance activities associated with construction, operation and maintenance, or decommissioning, archaeological sites are discovered that were not identified and evaluated in the archaeological survey reports or the Draft PA/EIS/EIR conducted prior to Project approval, and the following procedures shall be followed.

1. All ground disturbance activities within 100 feet of the discovered cultural resource shall be halted and the applicant shall notify the Project archaeologist, the Native American Tribal Observer, the BLM, and (on non-Federal land) the County archaeologist to discuss the significance of the find.
2. At the meeting, the significance of the discoveries shall be discussed in consultation with the Native American Tribal Observer and the Project archaeologist. The BLM alone shall determine the appropriate treatment for cultural resources on BLM- managed lands. The County Archaeologist and the BLM AO together shall determine the appropriate mitigation (documentation, evaluation, recovery, avoidance, etc.) for cultural resources on private lands. In determining the appropriate treatment on private land, the BLM shall follow requirements of 36 CFR Part 800.13 for post- review discoveries and the County Archaeologist shall implement CEQA Guidelines Section 15126.4(b) regarding mitigation related to impacts on historical resources and state CEQA Guidelines Section 15064.5(c) and 21083.2(g) regarding archaeological resources.
3. Further ground disturbance shall not resume within the area of the discovery until a meeting is convened with the aforementioned parties and a decision is made with the concurrence of the BLM and (on private land) the County Archaeologist as to the appropriate preservation or mitigation measures. The Applicant shall comply with the determinations of the County Archaeologist and BLM.

CULTURAL-5: Monitoring and Discovery Plan. Prior to issuance of the NTP or a County Grading Permit, the Applicant shall have the Secretary of the Interior Qualified/County-approved Project Archaeologist prepare and submit for approval to the BLM and the County of Riverside a MDP. The MDP shall map all cultural resources within the APE, as described in this Draft PA/EIS/EIR. The MDP shall also detail how resources, if any, are determined eligible or resources that are unevaluated but avoided by Project design, would be marked and protected as Environmentally Sensitive Areas during construction. The MDP shall also map additional areas that are considered to be of high sensitivity for discovery of buried significant cultural resources, including burials, cremations, or sacred features. The MDP shall detail provisions for monitoring construction in these high-sensitivity areas. It shall also detail procedures for halting

construction, making appropriate notifications to agencies, officials, and Native American tribes, and assessing NRHP and CRHR eligibility in the event that unknown archaeological resources are discovered during construction. For all post-review discoveries, the MDP shall detail the methods, consultation procedures, and timelines for implementing Mitigation Measures CULTURAL-1 and CULTURAL-2.

CULTURAL-6: Tribal Observer. Prior to any ground disturbances within the Project area, the Applicant shall, for a period of at least 60 days, make a good faith effort to enter into a contract with and retain monitors designated by Tribal representatives. These monitors shall be known as the Tribal Observer for this Project. Documentation of efforts shall be submitted to the BLM and County Archaeologists.

CULTURAL-7: Cultural Resources Monitoring Report. Prior to the final inspection of the first building permit, the Applicant shall prompt the Project Archaeologist to submit one (1) wet-signed hard copy and one (1) CD of a Cultural Resources Monitoring Report that meets BLM Manual requirements and also complies with the current Riverside County Planning Department's requirements for Phase IV Cultural Resource Monitoring Reports. The report shall include documentation of the required cultural/historical sensitivity training for the construction staff held during the pre-grade meeting, which shall include the BLM and County Archaeologist, unless no County representative is available. BLM and County Archaeologists shall review the report to determine adequate mitigation compliance. The accepted report shall be submitted to the BLM, County, Eastern Information Center, the Patton Memorial Museum, and interested tribes.

G.6 ENVIRONMENTAL JUSTICE

No mitigation measures are specifically recommended for environmental justice impacts. Mitigation measures are proposed to reduce impacts for several of the specific resource areas which could result in disproportionately high or adverse impacts on minority and/or low-income populations, including air quality, recreation, transportation and traffic, visual resources, and water resources. These were considered as part of the environmental justice analysis.

G.7 GEOLOGY AND SOILS

The following Project-specific mitigation measures were developed to reduce and/or avoid potential impacts associated with geologic hazards, and potential impacts to soil resources associated with the Project and alternatives.

GEO-1: Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design. The Applicant and/or its contractor shall perform a design-level geotechnical study that includes subsurface exploration and material testing necessary to determine the 2013 CBC seismic design category and site soil class for which each of the Project components must be designed. The geotechnical study shall address geologic hazards including, but not necessarily limited to, slope stability, rock fall hazards, landslide hazards, surface fault rupture, fissures, liquefaction potential, collapsible and/or expansive soils, hydroconsolidation, subsidence, wind and water erosion, debris flows, seiche, and groundshaking potential. Based on the nature,

location and severity of adverse soil conditions, the geotechnical study shall recommend appropriate and feasible design features necessary to reduce the potential for liquefiable, expansive, corrosive or collapsible soils to adversely affect DQSP facilities. Such measures might include use of corrosion-resistant materials and coatings; use of non-corrosive, non-expansive backfills; use of cathodic protection systems; soil-treatment processes; redirection of surface water and drainage away from expansive foundation soils; and/or any other combination of soil preparation methods or foundation designs necessary to avoid or reduce the adverse effects of soils on Project structures.

Studies shall be carried out by a registered geologist or certified geotechnical engineer, and shall conform to industry standards of care and ASTM standards for field and laboratory testing. For completeness and direct correlation to the Proposed Action, the Applicant shall provide the geotechnical consultant with the most recent copy of the Project case exhibit (tract map, parcel map, plot plan, etc.) for incorporation into the report. Furthermore, the consultant shall plot all appropriate geologic and geotechnical data on this case exhibit and include it as an appendix/figure/plate in their report. Study results and proposed solutions shall be provided for review and approval to the BLM at least 60 days before final Project design, and to the County Engineering Geologist prior to scheduling the case for a public hearing.

G.8 PROJECT DESIGN

The following Project-specific mitigation measures were developed to reduce and/or avoid potential impacts associated with the Project and alternatives design.

GHG-1: Seal Circuit Breakers. All SF_6-containing circuit breakers that will be installed for each power unit shall be hermetically sealed.

G.9 HAZARDS AND HAZARDOUS MATERIALS

The following Project-specific mitigation measures were developed to reduce and/or avoid potential hazard and hazardous materials impacts associated with the Proposed Action and alternatives.

HAZ-1: Site-Specific Hazardous Materials Management and Emergency Response Plan. Prior to the Notice to Proceed, the Applicant shall prepare and implement a site-specific Hazardous Materials Management and Emergency Response Plan. The plan shall identify the chemicals potentially present in onsite soils, health and safety hazards associated with those chemicals, monitoring to be performed during site activities, soil handling and disposal methods required to minimize the potential for harmful exposures, appropriate personal protective equipment, and emergency response procedures. The Plan shall be included in and implemented as part of the Project's larger Safety and Health Program. The plan shall be submitted to the BLM and County for approval prior to commencement of construction activities and shall be distributed to all construction crew members prior to construction, operation, and decommissioning of the Project.

The Phase I Environmental Site Assessment (ESA) conducted for the Project site in 2015 identified two suspected groundwater supply wells, which were observed to be open and unsecured. In addition, hazardous substances, in the form of partially-filled oil and lubricant

containers and other trash and debris, were observed on the private land parcel. There have been no subsequent response actions, including securing of the groundwater wells or sampling of environmental media, to verify whether site contamination currently exists. Prior to a notice to proceed for construction, the Applicant shall conduct additional hazardous substances investigations to establish a baseline hazardous contamination condition of groundwater and soils at the site. Hazardous materials containers currently onsite shall be removed and disposed properly. Soils in the area of these containers shall be sampled to determine whether contaminated soils are present. If present, contaminated soils shall be removed and disposed properly prior to construction in those areas. The Applicant shall sample groundwater in the vicinity of the two wells to document pre-Project groundwater quality, and then cap and secure any existing wells not used for construction or operations. Water quality and hazardous release testing of all wells and leach field would be conducted on a monthly basis and reported to the BLM Authorized Officer.

HAZ-2: Broken PV Module Detection and Handling. Damaged or broken modules shall be recycled or disposed of in an appropriately licensed landfill.

HAZ-3: Aircraft Safety Consultation. The Applicant shall consult with FAA to determine the requirements for filing FAA Forms 7460-1, Notice of Proposed Construction or Alteration, and 7460-2, Notice of Actual Construction or Alteration at least 45 days prior to the start date of construction. If such filing is required, the Applicant shall receive a "Determination of No Hazard to Air Navigation" in order to proceed.

UXO-1: UXO Identification, Training, and Reporting Plan. The Applicant shall prepare and implement a UXO Identification, Training, and Reporting Plan to properly train all site workers in the recognition, avoidance, and reporting of military waste debris and ordnance. The Applicant shall submit the plan to the BLM for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following:

1. A description of the training program outline and materials, and the qualifications of the trainers;
2. Identification of available trained experts that will respond to notification of discovery of any suspected ordnance (unexploded or not);
3. Procedures to stop work immediately in the vicinity of suspected UXO and to notify the local CUPA and the U.S. Army Corps of Engineers;
4. A work plan to recover and remove discovered ordnance, and complete additional field screening, possibly including geophysical surveys to investigate adjacent areas for surface, near-surface or buried ordnance in all proposed land disturbance areas.
5. Documentation of all surveys and investigations performed to evaluate and remove discovered ordnance.

The Applicant shall submit the UXO Identification, Training, and Reporting Plan to the BLM for approval no less than 30 days prior to the initiation of construction activities at the site or within the linear corridors, as appropriate. The results of geophysical surveys shall be submitted to the BLM within 30 days of completion of the surveys.

TLSN-1: Radio Frequency Interference. The Applicant shall limit the conductor surface electric gradient in accordance with the IEEE Radio Noise Design Guide for High-Voltage

Transmission Lines. After energizing the gen-tie line, the Applicant shall respond to and document all radio frequency interference complaints received and the responsive action taken. These records shall be made available to the BLM for review upon request.

G.10 LANDS, REALTY, AND AGRICULTURAL AND FORESTRY RESOURCES

No mitigation measures are required to reduce impacts related to lands and realty and land use planning. The Project would conform to power industry standards and best practices for the co-location of utility lines. Where the IOPs associated with use of the Section 368 corridor require mitigation, that mitigation is considered under the applicable resource sections, as shown in Appendix F, Table F-1.

G.11 MINERAL RESOURCES

No mitigation measures are recommended.

G.12 NOISE

The following mitigation measures would be imposed by the BLM to avoid or reduce noise impacts on residents:

NOISE-1: Noise Level Monitoring. The Applicant shall monitor noise levels at the NNSR location daily for one week before and for one week at the beginning of Month 6, when overlap of construction activity #3 and activity #5 (as defined in the Applicant's Noise Technical Report, URS 2015) begins, to verify that energy equivalent noise levels (Leq) measured over a 20-minute period do not increase between the two measurement periods by more than 10 dBA. If this limit is not exceeded, the Applicant may present results to BLM and the County to request that the requirement for further monitoring be eliminated. If the limit is exceeded, the Applicant shall work with BLM, the County, and affected residents to achieve the necessary reduction or otherwise mitigate the effect.

G.13 PALEONTOLOGICAL RESOURCES

The following mitigation measures would be imposed by the BLM to avoid and, if necessary, mitigate any impacts to paleontological resources:

PAL-1: Project Paleontologist. Prior to the issuance of a Notice to Proceed by BLM, a qualified paleontologist approved by the BLM to serve as Project Paleontologist shall be retained by the project owner. This individual shall retain a BLM paleontological resource use permit for the project and a paleontological permit from the County of Riverside. To do so, this individual shall have the following qualifications as stipulated in BLM Manual 8270-1 Chapter IV:

1. Professional instruction in a field of paleontology relevant to the work proposed (vertebrate, invertebrate, trace, paleobotany, etc.), obtained through:

a. Formal education resulting in a graduate degree from an accredited institution in paleontology, or in geology, biology, botany, zoology or anthropology if the major emphasis is in paleontology; or

b. Equivalent paleontological training and experience including at least 24 months under the guidance of a professional paleontologist who meets qualification above that provided increased responsibility leading to professional duties similar to those in qualification above; and

2. Demonstrated experience in collecting, analyzing, and reporting paleontological data, similar to the type and scope of work proposed in the application;

3. Demonstrated experience in planning, equipping, staffing, organizing, and supervising crews performing the work proposed in the application;

4. Demonstrated experience in carrying paleontological projects to completion as evidenced by timely completion and/or publication of theses, research reports, scientific papers and similar documents.

The project owner shall provide the BLM Authorized Officer with the resume and qualifications of its Project Paleontologist for review and approval. The Project Paleontologist resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the BLM Authorized Officer the appropriate education and experience to accomplish the required paleontological resource tasks. If the approved Project Paleontologist is replaced prior to completion of project mitigation and submittal of the Paleontological Resources Report, the project owner shall obtain BLM Authorized Officer approval of the replacement Project Paleontologist.

As described in BLM IM 2009-011, the Project Paleontologist will serve as the Principal Investigator (PI) under the BLM permit and is responsible for all actions under the permit, for meeting all permit terms and conditions, and for the performance of all other personnel. This person is also the contact person for the project proponent and the BLM.

Additional Paleontological Staff – The Project Paleontologist may obtain the services of Paleontological Field Agents, Field Monitors, and Field Assistants, if needed, to assist in mitigation, monitoring, and curation activities. These individuals must meet the qualifications as stipulated in BLM Manual 8270 1 Chapter IV and BLM IM 2009-011, and their resumes must be reviewed and approved by BLM as part of the BLM paleontological resource use permit process.

PAL-2: Materials for Project Paleontologist and BLM Authorized Officer. The project owner shall provide to the Project Paleontologist and the BLM Authorized Officer, for approval, maps and drawings showing the footprint of the power plant, construction lay-down areas, and all related facilities. Maps shall identify all areas of the Project where ground disturbance is anticipated. If the Project Paleontologist requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the Project Paleontologist and BLM Authorized Officer. The site grading plan, and plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet. If the footprint of the Project or its linear facilities changes, the project owner shall provide maps and drawings reflecting those changes to the Project Paleontologist and BLM Authorized Officer.

If construction of the Project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the Project Paleontologist and BLM Authorized Officer. Before work commences on affected phases, the project owner shall notify the Project Paleontologist and BLM Authorized Officer of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the Project Paleontologist or Paleontological Resources Monitor (PRM) consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked the following week and until ground disturbance is completed.

PAL-3: Paleontological Resources Monitoring and Mitigation Plan (PRMMP). Prior to the issuance of a Notice to Proceed by BLM, the Project Paleontologist shall submit a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) for the Project to the BLM for review and approval. The appropriate Paleontology Lead or Regional Paleontologist shall review the plan for sufficiency prior to acceptance. Approval of the PRMMP by the BLM Authorized Officer shall occur prior to any ground disturbance.

The PRMMP shall be prepared and implemented under the direction of the Project Paleontologist and shall address and incorporate MM PAL-1 through MM PAL-8. The PRMMP shall be prepared at the sole expense of the project proponent, and meet all current BLM and Riverside County regulatory requirements, including BLM 8270 manual and handbook, BLM IM No. 2009-011 Assessment and Mitigation of Potential Impacts to Paleontological Resources, and BLM IM No. 2016-124 Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. The PRMMP shall also comply with the Paleontological Resources Protection Act and final DOI PRPA rules.

The PRMMP shall function as the formal guide for survey, monitoring, collecting, and sampling activities and may be modified with BLM Authorized Officer approval. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the Project Paleontologist, each monitor, the project owner's on-site manager, and the BLM Authorized Officer.

A monitoring plan indicates the avoidance or treatments recommended for the area of the proposed disturbance and must minimally address the following:

1. The design of a PFYC assessment and pedestrian paleontological survey (MM PAL-5) for any as-of-yet unsurveyed Project areas with PFYC 3, 4, 5, or unknown classification, the results of which will be used to map impact areas affecting geologic units with moderate to high sensitivity that will require monitoring or spot-checking during construction;

2. A coordination strategy to ensure that a qualified paleontologist (MM PAL-1) will conduct paleontological survey and monitoring at the appropriate locations at the appropriate intensity;

3. The significance criteria to be used to determine which resources will be avoided or recovered for their data potential;

4. Procedures for the discovery, recovery, preparation, and analysis of paleontological resources encountered during construction, in accordance with standards for recovery established by the SVP and the BLM;

5. Provisions for verification that the project proponent has an agreement with a recognized museum repository, for the disposition of recovered fossils and that the fossils shall be prepared prior to submittal to the repository as required by the repository (e.g., prepared, analyzed at a laboratory, curated, or cataloged);

6. Specifications that all paleontological work undertaken by the project proponent on public land shall be carried out by qualified paleontologists with appropriate current permits (MM PAL-1), including but not limited to a Pale- ontological Resources Use Permit (for work on public lands administered by BLM) and a Riverside County permit (for work on lands administered by the County of Riverside);

7. Description of monitoring reports that will be prepared which shall include daily logs, monthly reports, and a final monitoring report with an itemized list of specimens found to be submitted to the BLM, the Riverside County Planning Department, the project proponent and the designated repository within 90 days of the completion of monitoring;

8. The implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post- ground–disturbance analysis phases of the project shall be specified; and

9. Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team shall be identified.

10. All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts.

PAL-4: Approved Training Pertaining to Ground Disturbance. Prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the Project Paleontologist shall prepare and conduct BLM Authorized Officer -approved training for the following workers: project managers, construction supervisors, foremen, and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving BLM Authorized Officer-approved worker training. Worker training shall consist of an initial in-person Project Paleontologist training or may utilize a BLM Authorized Officer-approved video or other presentation format during the project kickoff for those mentioned above. Following initial training, a BLM Authorized Officer-approved video or other approved training presentation/materials, or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. No ground disturbance shall occur prior to BLM Authorized Officer-approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the BLM Authorized Officer.

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources.

The training shall include:

1. A discussion of applicable laws and penalties under the law;

2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;

3. Information that the Project Paleontologist or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;

4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the Project Paleontologist or PRM;

5. An informational brochure that identifies reporting procedures in the event of a discovery;

6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and

7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

PAL-5: Pedestrian Paleontological Survey. Prior to the Final EIS, the project owner shall ensure completion of a pedestrian paleontological survey (PPS), as described in the PRMMP prepared by the Project Paleontologist and approved by the BLM Authorized Officer (MM PAL-3). The PPS shall be completed at the sole expense of the project proponent, and meet all current BLM and Riverside County regulatory requirements, including BLM 8270 manual and handbook, BLM IM No. 2009-011 Assessment and Mitigation of Potential Impacts to Paleontological Resources, and BLM IM No. 2016-124 Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. The PPS shall also comply with the Paleontological Resources Protection Act and final DOI PRPA rules. The Project Paleontologist shall oversee and implement the BLM-approved PPS, which shall include a PFYC assessment and survey for any as-of-yet unsurveyed Project areas with PFYC 3, 4, 5, or unknown classifications. The results of the PPS shall be used to map impact areas affecting geologic units with moderate to high sensitivity that will require monitoring or spot-checking during construction. Final results of the PPS shall be included in the PRR (MM PAL-8).

PAL-6: Paleontological Monitoring Activities. The project owner shall ensure that the Project Paleontologist and PRM(s) monitor consistent with the PRMMP in all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the Project. In the event that the Project Paleontologist determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence of the BLM Authorized Officer. The project owner shall ensure that the Project Paleontologist and PRM(s) have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the Project Paleontologist. Monitoring activities shall be conducted as follows:

1. Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the Project Paleontologist and the project owner to the BLM Authorized Officer prior to the change in monitoring and will be included in the monthly compliance

report. The letter or email shall include the justification for the change in monitoring and be submitted to the BLM Authorized Officer for review and approval.

2. The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities. The Project Paleontologist may informally discuss paleontological resource monitoring and mitigation activities with the BLM Authorized Officer at any time.

3. The project owner shall ensure that the Project Paleontologist notifies the BLM Authorized Officer within 24 hours of the occurrence of any incidents of non-compliance. The Project Paleontologist shall recommend corrective action to resolve the issues.

4. For any significant paleontological resources encountered, either the project owner or the Project Paleontologist shall notify the BLM Authorized Officer within 24 hours, or Monday morning in the case of a weekend event, where construction has been halted because of a paleontological find. The project owner shall ensure that the Project Paleontologist prepares a summary of monitoring and other paleontological activities placed in the monthly compliance reports. The summary will include the name(s) of Project Paleontologist or PRM(s) active during the month; general descriptions of training and monitored construction activities; and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report will address any issues or concerns about the Project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the BLM Authorized Officer. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

PAL-7: Implementation of PRMMP. The project owner, through the designated Project Paleontologist, shall ensure that all components of the PRMMP are adequately performed including completion of the PPS, collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during PPS and project construction.

PAL-8: Paleontological Resources Report (PRR). The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated Project Paleontologist. The PRR shall be prepared within 30 days following completion of ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and submit it to the BLM Authorized Officer for review and approval. The report shall include, but is not limited to determinations of sensitivity and significance; a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; and a statement by the Project Paleontologist that project impacts to paleontological resources have been mitigated below the level of significance. At a minimum the final report must include the following details as specified by BLM IM 2009-011:

1. Name, affiliation, address, date of report, and permit number (if consultant) of the paleontologist doing the survey.

2. Project name and number (if used), name of proponent, and general location of project.

3. Date(s) of the survey and names of any personnel assisting with the survey.

4. Brief description of project and expected impacts to paleontological resources.

5. A summary of mitigation performed.

6. A summary of findings, including important discoveries.

7. A description of potentially fossiliferous areas to allow for future assessment of sites, even if no fossils were located during the project monitoring.

8. A completed BLM locality form 8270-3 or equivalent for each new locality using Universal Transverse Mercator (UTM) NAD 83 coordinates, and 1:24000 scale maps with new localities plotted using points or polygons as appropriate. Locality forms, maps, and any other information containing specific fossil locations should be bound separately or assembled as a separate section to allow for preservation of confidential locality data.

9. List of specimen field numbers and field identifications of collected material, cross-referenced to the locality field number.

G.14 RECREATION AND PUBLIC ACCESS

The following mitigation measures would be imposed by the BLM to avoid or reduce impacts on recreation and public access:

REC-1: Access to Mule Mountains ACEC. The Applicant shall ensure that the alternative access route to the Mule Mountains ACEC (identified in Figure 3.14-3) is accessible by performing light clearing and grading prior to Project construction, and then periodically throughout the duration of the Project. The alternative access route shall be marked by signage provided by the Applicant, and supported by the installation of a kiosk at a location to be determined by BLM. The Applicant shall conduct recording of historic/prehistoric trails prior to ground disturbance. Biological monitoring shall be performed during active ground disturbance.

The Applicant shall prepare and distribute interpretive materials, approved by the AO, including a construction schedule, safety information regarding trucks and other heavy equipment on local roads, and available open OHV routes to users of the Midland, Mule Mountains, and La Posa Long-Term Visitor Areas (LTVAs), Wiley's Well and Coon Hollow Campgrounds, and BLM kiosks announcing the development of the solar facilities at the Project site and the closure of the affected public land and six open routes to recreational use. The Applicant shall prepare a one-page fact sheet about the Project and submit it to the Palm Springs-South Coast Field Office for review. The BLM AO shall approve the draft materials prior to distribution.

REC-2: Temporary Route Closure. No less than 60 days prior to construction and maintenance of the gen-tie line, the Applicant shall coordinate with the AO administering the NECO Plan-designated route 660703 to establish temporary closure of the route to avoid construction/maintenance area hazards, if the route is deemed unsafe to use during construction or maintenance of the gen-tie line. The Applicant shall post a public notice of the temporary route closure and penalties for any off-route OHV activities, and shall coordinate the closure with applicable emergency response agencies. The Applicant shall document its coordination efforts with the AO and submit this documentation to the BLM and other agencies affected at least 30 days prior to construction.

REC-3: Use of LTVAs. The Applicant shall encourage Project workers to utilize local housing or private RV parks in Blythe and/or nearby communities. The Applicant shall encourage Project workers to utilize local housing or private RV parks in Blythe and/or nearby communities. If the Applicant sees a need to use the LTVAs, the Applicant shall seek additional authorization from the BLM prior to their use. If the BLM authorizes use of the LTVA, the BLM shall monitor the impact of workers using the LTVAs, including space and experience for recreational users, and condition of access roads to the LTVAs. Workers would only use the campgrounds during the LTVA season, and must supply their own water from offsite. The Applicant shall coordinate with the County to provide either hardening of the access roads, or monthly blading during the LTVA season.

G.15 SOCIAL AND ECONOMIC EFFECTS

No mitigation measures are recommended.

G.16 SPECIAL DESIGNATIONS AND LANDS WITH WILDERNESS CHARACTERISTICS

No mitigation measures would be imposed by the BLM related to special designations or lands with wilderness characteristics.

G.17 TRANSPORTATION AND TRAFFIC

The following Project-specific mitigation measures were developed to reduce and/or avoid potential transportation and traffic impacts associated with the Proposed Action and alternatives.

TRN-1: Traffic Monitoring and Control Plan. Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant's Traffic Monitoring and Control Plan shall be submitted to the BLM and County for approval. The Traffic Monitoring and Control Plan, described in APM TRA-2, shall be developed and implemented to include the following features:

1. The Applicant and/or its contractor shall coordinate development and implementation of this plan with the BLM and other jurisdictional agencies (e.g., Riverside County and Caltrans), as appropriate.
2. To the extent applicable, the traffic control plan shall conform to Part 6 (Temporary Traffic Control) of the California Manual on Uniform Traffic Control Devices (Caltrans 2010), and shall include, but not be limited to, the following elements:
3. Implementing circulation and detour plans to minimize impacts on local road circulation during temporary lane closures. Flaggers and/or signage shall be used to guide vehicles through and/or around the work zone.
4. Identifying truck routes designated by Riverside County and local jurisdictions. Haul routes that minimize truck traffic on local roadways shall be utilized to the extent possible.
5. Providing sufficient-sized staging areas for trucks accessing work zones to minimize disruption of access to adjacent public right-of-ways.

6. Scheduling truck trips outside the peak morning and evening commute hours to the extent possible.
7. Limiting the duration of lane closures to the extent possible.
8. Storing all equipment and materials in designated contractor staging areas on or adjacent to the worksite, such that traffic obstruction is minimized.
9. Implementing roadside safety protocols. Advance "Road Work Ahead" warning and speed control signs (including those informing drivers of state-legislated double fines for speed infractions in a work zone) shall be posted to reduce speeds and provide safe traffic flow through the work zone.
10. Providing advance notification to administrators of police and fire stations (including fire protection agencies), ambulance service providers, and recreational facility managers of the timing, location, and duration of construction and decommissioning activities and the locations of detours and lane closures, where applicable. Maintain access for emergency vehicles within, and/or adjacent to, roadways affected by construction and decommissioning activities at all times.
11. Repairing and restoring adversely affected roadway pavements to their pre-construction condition.

TRN-2: Coordinated Transportation Management Plan. Prior to construction, the Applicant shall develop a Coordinated Transportation Management Plan and work with the BLM and Riverside County to prepare and implement a plan for roadways adjacent to and directly affected by the planned Project facilities, and to address the transportation impact of the multiple overlapping construction projects within the vicinity of the Project in the region. The Coordinated Transportation Management Plan shall include, but not be limited to, the following requirements:

1. Coordination of individual traffic control plans for the Project and nearby projects.
2. Coordination between the contractor and Riverside County in developing circulation and detour plans that include safety features (e.g., signage and flaggers). The circulation and detour plans shall address:
    - Full and partial roadways closures;
    - Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices;
    - Bicycle detour plans, where applicable;
    - Parking along arterial and local roadways; and
    - Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at the work sites.
3. Protocols for updating the Coordinated Transportation Management Plan to account for delays or changes in the schedules of individual projects.

The Coordinated Transportation Management Plan shall incorporate an access road siting and management plan, and transportation plan for the transport of transmission tower components and equipment, in accordance with the requirements of the IOPs for the Section 368 corridor.

The Coordinated Transportation Management Plan shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

TRN-3: Reduce Construction Worker Vehicles. Prior to the Notice to Proceed, APM TRA-1 shall be modified to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. The Applicant used an iterative analysis to determine that a maximum of 650 vehicles during the PM peak hour was necessary to achieve operation of the intersection at LOS D. The Applicant shall re-perform the iterative analysis to determine the maximum number of vehicles necessary to achieve operation of the intersection at LOS C, and then implement the measure to limit the vehicles to this number. The revised analysis shall be submitted to BLM and the County for review and approval.

TRN-4: Improve Access Road. Prior to construction of the Project fence, solar facility, gen-tie, temporary construction areas, and other facilities, the Applicant shall complete improvements to 16th Avenue/Seeley Avenue between Neighbours Boulevard (State Route 78) and the site entrance. The current unpaved road shall be paved with 32-foot wide asphalt concrete pavement designed for truck traffic, and 8-foot graded shoulders per County Standard No. 106. The paving shall include improvement of the intersection of 16th Avenue/Seeley Avenue and State Route 78 to allow for a turning lane off of 16th Avenue/Seeley Avenue onto State Route 78.

Prior to road construction, survey monuments shall be located and tied out, and corner records filed with the County Surveyor. A grading plan shall be submitted to the County transportation department for review and approval prior to issuance of a grading permit. Completion of road improvements shall not imply acceptance for maintenance by the County. Traffic signing and striping shall be performed by the County, with all costs borne by the Applicant, unless otherwise approved by the County Traffic Engineer.

Table G-17-1. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Air Resources	Regional description of the Project area in Section 3.2 applies to the entire access road. Access road may pass closer to locations of residents than the Project itself.	Additional criteria pollutant and greenhouse gas emissions would occur from vehicle worker travel and equipment used to construct this project. Since the activities associated with TRN-4 would occur before construction of the project, and since the numbers of workers, equipment, and acreage of dust disturbance would be less than that of the Project, (for example, 20 acres of disturbance vs. 3,770 for the Proposed Action), emissions would not likely exceed the Construction Daily Emission Estimations reported for the Proposed Action in Table 4.2-2, or increase the Construction Annual Emission Estimations reported in Table 4.2-3. Even with several sets of pavers, rollers, and other equipment operating simultaneously, their emissions would not exceed maximum daily emissions thresholds for criteria pollutants, based on modeling of a recent smaller but similar roadway repaving project in Riverside County (Urban Crossroads 2018). Emissions and odors may occur in close proximity to residences and businesses along the roadway. These would be temporary, occurring only for less than a day or two as construction moved past each specific receptor. Once constructed, the paved road would reduce the fugitive dust emissions reported in Tables 2.4-2 and 4.2-3, a beneficial effect of this measure.	Dust Control Plan (AQ-1), and Construction Emissions Reduction (AQ-3)

Table G-17-1. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Biological Resources - Vegetation	Regional description of the Project area in Section 3.3 applies to the entire access road. Resources expected to be limited/non-existent within the existing ROW. Specific presence of resources to be determined in pre-construction surveys (see mitigation measures)	Since all paving activities would occur within the previously existing easement, and pre-construction surveys would be required to identify any potentially impacted special-status plants or state jurisdictional waters adjacent to the roadway, no impacts would occur.	Designated Biologist (VEG-1 through 5), Worker Environmental Awareness Program (VEG-6), Biological Resources Mitigation, Implementation, and Monitoring Plan (APM-BIO-1 and VEG-7), General Construction Measures and Plans (APM-BIO-2, APM-BIO-3, and VEG-8), Special Status Plant Avoidance and Vegetation Resources Management Plan (APM-BIO-4 and VEG-9), Mitigation for Impacts to State Jurisdictional Waters (VEG-10), and Integrated Weed Management Plan (APM-BIO-5)
Biological Resources - Wildlife	Regional description of the Project area in Section 3.4 applies to the entire access road. Resources expected to be limited/non-existent within the existing ROW. Specific presence of resources to be determined in pre-construction surveys (see mitigation measures)	Since all paving activities would occur within the previously existing easement, pre-construction surveys would be required to identify any potentially impacted special-status wildlife or birds adjacent to the roadway, and Biological Monitoring of construction activities would be required, no impacts would occur.	Pre-construction tortoise survey and avoidance (WIL-1), tortoise translocation (WIL-2), notifications and reporting (WIL-3), Raven Management Plan (WIL-5), Bird and Bat Conservation Strategy (WIL-6), pre-construction nest surveys (WIL-7), badger and kit fox protection (WIL-9), Burrowing Owl protection (WIL-10), and Couch's spadefoot toad protection (WIL-12)

Table G-17-1. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Cultural Resources	Regional description of the Project area in Section 3.5 applies to the entire access road. Resources expected to be limited/non-existent within the existing ROW. Specific presence of resources to be determined in pre-construction surveys (see mitigation measures)	Since all paving activities would occur within the previously existing easement, pre-construction surveys would be required to identify any potentially impacted cultural resources within or adjacent to the roadway, and monitoring of construction activities would be required, no impacts would occur.	Unanticipated human remains (private land section of CULTURAL-3), unanticipated cultural resources (non-Federal land requirements of CULTURAL-4), Tribal Observer (CULTURAL-6), and Cultural Resources Monitoring Report (CULTURAL-7)
Environmental Justice	Regional description of the Project area in Section 3.6 applies to the entire access road. No other site-specific resources expected.	The paved roadway would not affect environmental justice populations. No impacts are expected.	None.

Table G-17-1. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Geology and Soils	Regional description of geologic hazards in the Project area in Section 3.7 applies to the entire access road. No other site-specific geologic resources or hazards expected within existing roadway. Soils within the roadway have already been disturbed.	The paved roadway would not be affected by geologic or soil hazards. No impacts are expected.	None.
Global Climate Change	Regional description of the Project area in Section 3.8 applies to the entire access road.	Additional greenhouse gas emissions would occur from vehicle worker travel and equipment used to construct this project. These emissions are expected to be nominal compared to those of the Proposed Action.	None.
Hazards and Hazardous Materials	Regional description of the Project area in Section 3.9 applies to the entire access road. No other site-specific hazards expected within existing roadway.	As with the Proposed Action, releases of hazardous materials could occur if any unknown materials are encountered during ground disturbance, or if releases occur from vehicles or equipment. In general, the potential for releases is expected to be minimal compared to that of the Project, due to a much shorter duration of construction, and much reduced amount of equipment and vehicles. With compliance with the Hazardous Materials Management and Emergency Response Plan, impacts are expected to be less than significant.	Hazardous Materials Management and Emergency Response Plan (HAZ-1), and UXO Identification, Training, and Reporting (UXO-1)

Table G-17-1. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Lands, Realty, and Agricultural and Forestry Resources	Road paving would occur on current County easements, and not on BLM land.	Paving would be limited to the existing easements, and would be in conformance with the conditions and limitations of those easements. The activity would not have any impacts on adjacent lands outside of the easements.	None.
Mineral Resources	Regional description of the Project area in Section 3.11 applies to the entire access road. No other site-specific resources expected within existing roadway.	The paved roadway would not affect mineral resources. No impacts are expected.	None.
Noise	Regional description of the Project area in Section 3.12 applies to the entire access road. Access road may pass closer to locations of residents than the Project itself.	Maximum noise levels from a roller, the noisiest equipment that would be used, would be about 80 dBA at 50 feet (FHWA 2008). The nearest structure to the road is about 800 feet from the road near Woodspur Farms. Based on a typical 6 dB attenuation per doubling of distance, the maximum level would be about 56 dBA at this distance. Riverside County Ordinance 847.1 (Riverside County 2007) sets day and night maximum sound levels at 45 dB for Rural Residential and Agricultural areas; however, it exempts the maintenance or repair of public properties from its restrictions. Since no County standards would be violated and noise from this measure would temporarily affect only one structure during a few days of construction, impacts would be less than significant.	None.

Table G-17-1. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Paleontological Resources	Regional description of the Project area in Section 3.13 applies to the entire access road. No other site-specific resources expected within existing roadway.	Since all paving activities would occur within the previously existing easement, pre-construction surveys would be required to identify any potentially impacted resources within or adjacent to the roadway, and monitoring of construction activities would be required, no impacts would occur.	Project Paleontologist (PAL-1, PAL-2), Paleontological Resources Monitoring and Mitigation Plan (APM-Paleo-2, PAL-3, PAL-6, PAL-7, and PAL-8), training prior to ground disturbance (PAL-4), and pedestrian survey (APM-Paleo-1 and PAL-5).
Recreation and Public Access	Regional description of the Project area, including 16th Avenue/Seeley Avenue, in Section 3.14 applies to the entire access road. No other site-specific recreational resources expected along existing roadway.	Travel along this route would be temporarily delayed during construction. Since these impacts would be temporary, impacts would be less than significant. After construction is completed, access to public lands would improve as a result of roadway improvements.	Coordinate temporary closure of 16th Avenue/Seeley Avenue with County, local residents, and emergency services (REC-2).
Social and Economic Effects	Regional description of the Project area in Section 3.15 applies to the entire access road.	The paved roadway would not require a substantial number of workers, or works with skills that are not readily available. No impacts are expected.	None.

Table G-17-1. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Special Designations	Regional description of the Project area in Section 3.16 applies to the entire access road. No other site-specific special designation areas expected along existing roadway.	The paved roadway would not affect any special designation areas. No impacts are expected.	
Transportation and Traffic	Regional description of the Project area, including 16th Avenue/Seeley Avenue, in Section 3.17 applies to the entire access road.	Traffic on 16th Avenue/Seeley Avenue would be disrupted during construction, possibly to include temporary closure and/or detours. The Traffic Monitoring and Control Plan and Coordinated Transportation Management Plan would require coordination with the County, local users, and emergency services to minimize impacts. Any impacts are expected to be temporary and localized. This measure would reduce the traffic impacts to the intersection of State Route 78 with 16th Avenue/Seeley Avenue during Project construction, a beneficial effect of this measure.	Traffic Monitoring and Control Plan (APM-TRA-2 and TRN-1), and Coordinated Transportation Management Plan (TRN-2).
Utilities and Public Services	Regional description of the Project area in Section 3.18 applies to the entire access road. No other site-specific utilities or services expected within existing roadway.	The paving activity would disrupt traffic on 16th Avenue/Seeley Avenue during construction, possibly to include temporary closure and/or detours. The only potential impacts to utilities or public services may be to the use of the roadway by emergency services during construction. The Traffic Monitoring and Control Plan and Coordinated Transportation Management Plan would require coordination with the County, local users, and emergency services to minimize impacts. Any impacts are expected to be temporary and localized.	No mitigation specifically for utilities. However, the Traffic Monitoring and Control Plan (APM-TRA-2 and TRN-1) and Coordinated Transportation Management Plan (TRN-2) required for transportation and traffic impacts would also address potential impacts to emergency services.

Table G-17-1. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Visual Resources	Regional description of the Project area in Section 3.19 applies to the entire access road.	The paved roadway would not affect visual resources. No impacts are expected.	Lighting Plan (VIS-1), and Site Restoration (VIS-4).
Water Resources	Regional description of the Project area in Section 3.20 applies to the entire access road. Resources expected to be limited/non-existent within the existing ROW. Specific presence of resources to be determined in pre-construction surveys (see mitigation measures)	The paved roadway would not affect groundwater resources or surface water drainage. No impacts are expected.	SWPPP (WATER-1).
Wildland Fire Ecology	Regional description of the Project area in Section 3.21 applies to the entire access road.	Since all paving activities would occur within the previously existing easement, there is not expected to be any increase in the potential for fire ignitions. No impacts are expected.	Fire Safety Plan (FIRE-1).

References:

FWHA, 2008. Federal Highway Administration's Roadway Construction Noise Model (RCNM) Software Version 1.1, 12/08/2008.

Riverside County 2007. Ordinance No. 847 (As Amended Through 847.1) - An Ordinance of the County of Riverside Amending Ordinance No. 847 Regulating Noise. Amended June 19.

Urban Crossroads, 2018. Limited Decker Road Repairs and Repaving Focused Air Quality and Greenhouse Gas Memorandum. May 16.

G.18 UTILITIES AND PUBLIC SERVICES

No mitigation measures are recommended for impacts to utilities and public services.

G.19 VISUAL RESOURCES

VIS-1: Project Design, Building and Structural Materials. Visual design elements shall be integrated into the construction plans, details, shop drawings and specifications to be submitted to BLM prior to the Notice to Proceed; these shall include, but not be limited to, grubbing and clearing, vegetation thinning and clearing, grading, revegetation, drainage, and structural plans. Visual design elements within the plans shall be measureable and monitored while under construction, while operational, and when decommissioned. A careful study of the site shall be performed to identify appropriate colors and textures for materials; both summer and winter appearance shall be considered as well as seasons of peak visitor use (September 15 to April 15). Visual design elements to be integrated into construction plans, details, shop drawings and specifications shall be based on BLM's *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*, and must at a minimum include:

1. Vegetation and ground disturbance associated with access road construction, gen-tie and distribution line installations, and the perimeter access road shall be minimized and take advantage of existing clearings wherever feasible.
2. Materials, coatings, or paints having little or no reflectivity shall be used whenever feasible.
3. Grouped structures, including the water tanks and prefabricated buildings, shall be painted the same color to reduce visual complexity and color contrast.
4. The gen-tie line shall utilize to the extent available and feasible nonspecular conductors and nonreflective coatings on insulators.
5. The choice of color treatments shall be based on the appearance at typical viewing distances and consider the entire landscape around the proposed development as it would be viewed from publically accessible locations. Appropriate colors for smooth surfaces often need to be two to three shades darker than the background color to compensate for shadows that darken most textured natural surfaces. Choice of colors shall be approved by BLM District Office.
6. A lighting plan shall be prepared that documents how lighting will be designed and installed to minimize night-sky impacts during facility construction, operations, and decommissioning. Lighting for facilities shall not exceed the minimum number of lights and brightness required for safety and security, and shall not cause excessive reflected glare. Low- pressure sodium light sources shall be used to reduce light pollution. Full cut-off luminaires shall be used to minimize uplighting. Lights should be directed downward or toward the area to be illuminated. Light fixtures shall not spill light beyond the Project boundary. Lights in highly illuminated areas that are not occupied on a continuous basis shall have switches, timer switches, or motion detectors so that the lights operate only

when the area is occupied. Where feasible, vehicle mounted lights shall be used for night maintenance activities. Wherever feasible, consistent with safety and security, lighting shall be kept off when not in use. The lighting plan shall include a process for promptly addressing and mitigating complaints about potential lighting impacts.

VIS-2: Construction Phase Visual Mitigation. A pre-construction meeting with BLM landscape architects or other designated visual/scenic resource specialists shall be held before construction begins to coordinate on the visual resources mitigation strategy and confirm the compliance- checking schedule and procedures. Final design and construction documents shall be reviewed for completeness with regard to the visual mitigation elements, assuring that requirements and commitments are adequately addressed. The construction documents shall include, but not be limited to grading, drainage, revegetation plans, and must demonstrate how VRM objectives will be met, monitored, and measured for conformance.

Specific measures shall include the following:

1. The Applicant shall reduce visual impacts during construction by clearly delineating construction boundaries and minimizing areas of surface disturbance; preserving existing, native vegetation to the extent feasible; stripping, salvaging, and replacing topsoil as described in the Revegetation Plan.
2. Visual impact mitigation objectives and activities shall be discussed with equipment operators before construction activities begin.
3. Existing rocks, vegetation, and drainage patterns shall be preserved to the extent feasible.
4. Brush-beating or mowing or using protective surface matting rather than removing vegetation shall be employed where feasible.
5. Slash from vegetation removal shall be mulched and spread to cover fresh soil disturbances as part of the revegetation plan.
6. No paint or permanent discoloring agents shall be applied to rocks or vegetation to indicate surveyor construction activity limits.
7. All stakes and flagging shall be removed from the construction area and disposed of in an approved facility.

VIS-3: Operation and Maintenance Phase Visual Mitigation. Terms and conditions for VRM mitigation compliance shall be maintained and monitored for compliance with visual objectives, adaptive management adjustments, and modifications as necessary and approved by the BLM AO. Minimum measures are as follows:

1. The Applicant shall maintain vegetated surfaces until a self-sustaining stand of vegetation is re-established and visually adapted to the undisturbed surrounding vegetation. No new disturbance shall be created during operations without completion of a VRM analysis and approval by the AO.
2. Interim restoration shall be undertaken during the operating life of the Project as soon as possible after disturbances.
3. Painted facilities shall be kept in good repair and repainted when color fades or flakes.

VIS-4: Decommissioning and Site Restoration Plan. A Decommissioning and Site Restoration Plan, covering visual impact mitigation measures, shall be in place prior to construction, and reclamation activities shall be undertaken as soon as possible after disturbances occur and be maintained throughout the life of the Project. The following decommissioning/reclamation activities/practices shall be implemented to partially mitigate visual and other resource impacts associated with solar energy development, where feasible:

1. Pre-development visual conditions and integrity shall be reviewed, and the visual elements of form, line, color, and texture shall be restored to pre-development visual compatibility or to that of the surrounding landscape setting conditions, whichever achieves the better visual quality and most ecologically sound outcome.
2. A Decommissioning and Site Restoration Plan shall be developed, approved by the BLM, and implemented. The plan shall require that all aboveground and near-ground structures be removed. Some structures shall be removed only to a level below the ground surface that will allow reclamation/restoration.
3. Components of the gen-tie line shall be removed to a depth of three feet, and shall be removed promptly. Following decommissioning, the Applicant shall provide BLM survey data showing the locations of all below-grade components of the gen-tie line left in place. Access roads use for decommissioning of the gen-tie line shall follow the paths of the original access roads, to the extent possible.
4. Topsoil from all decommissioning activities shall be salvaged and reapplied during final reclamation. The plan shall include provisions for monitoring and determining compliance with the Project's visual mitigation and reclamation objectives.
5. Soil borrow areas, cut-and-fill slopes, berms, water bars, and other disturbed areas shall be contoured to approximate naturally occurring slopes, thereby avoiding form and line contrasts with the existing landscapes. The Applicant shall contour to a rough texture (i.e., use large rocks/boulders, grade uneven surfaces, and/or vegetation mulches/debris) in order to trap seed and to discourage off-road travel, thereby reducing associated visual impacts.
6. A combination of seeding, planting of nursery stock, transplanting of local vegetation within the proposed disturbance areas, and staging of decommissioning activities enabling direct transplanting shall be utilized. Where feasible, native vegetation shall be used for revegetating to establish a composition consistent with the form, line, color, and texture of the surrounding undisturbed landscape.
7. Stockpiled topsoil shall be reapplied to disturbed areas. Gravel and other surface treatments shall be removed or buried.
8. Rocks, brush, and vegetal debris shall be restored whenever possible to approximate pre-existing visual conditions.
9. A decommissioning VRM Monitoring and Compliance Plan shall be prepared by the Applicant and approved by the BLM prior to decommissioning activities, which establishes the schedule and terms for monitoring and the conditions and methods of measurement for determining compliance. In review of the plan, BLM will consider the ability of the proposed activities to support BLM's Long Term Monitoring Strategy for the Riverside East SEZ (BLM 2016).

10. Monitoring for appearance, function, wildlife usage, and general compliance with the restoration provisions of this plan shall be conducted twice annually for 5 years and may be extended for an additional 5 years if the performance standards have not been achieved.

11. A survey of the revegetation areas shall be conducted in the spring of each year. Qualitative data will be collected on vegetation cover, species composition, appearance, and function of the plant community. In addition to qualitative data, quantitative data on vegetation cover and species composition will be collected by using ocular estimates or transects within the revegetation areas. The data collected will be compared against similar data collected within the reference site (i.e., associated undisturbed areas immediately adjacent to the Project site) or pre-disturbance conditions within the Project site.

G.20 WATER RESOURCES

WATER-1: Implementation of a SWPPP. To ensure that stormwater quality is protected during the construction and decommissioning period for the DQSP, as well as any ground disturbance (greater than one acre) maintenance done during the operational period, the Applicant shall comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance (Order No. 2009-0009-DWQ) (Construction General Permit), as applicable. Compliance with the Construction General Permit will ensure that the proposed construction activities would include BMPs to manage stormwater and control sediment and other pollutants from leaving the Project construction site. Compliance with the Construction General Permit, if applicable will require completion and implementation of a SWPPP for the DQSP site that shall be in effect during all construction, maintenance, and decommissioning activities for the solar field, the gen-tie line, and all associated facilities. The SWPPP shall identify pollutant sources that may affect the quality of stormwater discharge and shall require the implementation of BMPs to reduce pollutants in storm water discharges.

BMPs may include, but would not be limited to:

1. Stockpiles of loose material shall be covered or otherwise stabilized and runoff diverted away from exposed soil material.
2. To minimize discharge of sediment during storm events, temporary erosion control measures (such as fiber rolls, staked straw bales, detention basins, check dams, geofabric, sandbag dikes, check dams, erosion control blankets, matting, and other fabrics or other ground cover as available) shall be implemented and remain in place until surface sediments can be stabilized.
3. Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.
4. No disturbed surfaces may be left without erosion control measures in place during the rainy season.
5. Erosion protection shall be provided on all cut-and-fill slopes, and shall be initiated as soon as possible after completion of grading and prior to the onset of the rainy season.

6. Hazardous materials such as fuels and solvents used on the construction sites shall be stored in covered containers and protected from rainfall, runoff, vandalism, and accidental release to the environment. All stored fuels and solvents shall be contained in an area of impervious surface with containment capacity equal to or greater than the volume of materials stored. Spill cleanup materials shall be readily available at all construction sites. Employees shall be trained in spill prevention and cleanup, and individuals shall be designated as responsible for prevention and cleanup activities.
7. Equipment shall be properly maintained in designated areas with runoff and erosion control measures to minimize accidental release of pollutants.
8. Impervious surface areas shall be graded or constructed to drain to a filtration BMP or equally effective alternative.

Storage of gasoline and diesel fuel tanks, and all refueling and maintenance of vehicles and equipment, shall occur within a designated area with proper secondary containment. The area shall not be within 100 feet of a wetland, water body, or water supply well. The applicant would report any hazardous materials release to the BLM authorized officer within 24 hours of release.

WATER-2 Comprehensive Drainage, Stormwater, and Sedimentation Control Plan. Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall develop and implement a Comprehensive Drainage, Stormwater, and Sedimentation Control Plan prior to the initiation of construction (or decommissioning as relevant). The objective of the Plan shall be to avoid changes in onsite stormwater flow that could damage Project components, and to minimize changes in stormwater flow downstream of the facility that could impact offsite structures, biological resources, or cultural resources.

If required by the Comprehensive Drainage, Stormwater, and Sedimentation Control Plan, additional stormwater retention measures and facilities, including but not limited to retention basins and other facilities or features designed to retain stormwater on site, shall be implemented within the DQSP site. Stormwater retention facilities shall be designed to accommodate increases in flows that would be generated as a result of DQSP implementation, in comparison to existing conditions, such that DQSP implementation would not result in a net increase in discharge from the site under either a 10-year or 100-year storm event.

The use of flow-obstructing fencing shall be avoided in active drainages; instead, fencing that allows for the passage of water while minimizing buildup of debris shall be utilized on site. Stormwater flows emanating from proposed impervious surfaces shall be retained onsite and/or directed into channels and other stormwater infrastructure, and shall be sized such that unintentional ponding, flooding, erosion, or sedimentation would not occur onsite or downstream. Additionally, the number of road crossings over washes shall be minimized and necessary crossings shall be designed to provide adequate flow-through capacity during storm events, up to the 100-year event. In order to minimize disturbance to existing floodplains and natural channels, final facility designs shall be employed which minimize, to the extent practicable, the footprints of roads, parking lots, and other proposed facilities.

WATER-3: Flood Protection. In order to ensure that proposed onsite buildings and staff therein are protected from flooding, all onsite buildings and fill areas shall be placed outside of frequent flood flow areas. Additionally, proposed on-site buildings, maintenance areas, designated

parking lots, and associated facilities shall be constructed in accordance with local flood control standards or as recommended by the geotechnical engineer. Slope protection shall be provided for all fill areas exposed to erosive flows. In specific areas where frequent flows are anticipated, posts for solar panels shall be constructed on a deepened footing, as recommended by the geotechnical engineer, in order to withstand anticipated scouring.

The Applicant shall ensure that during construction, temporary construction related structures such as bridges, roads, berms, and other facilities would be constructed so as to avoid interference with 100-year flood flows. Temporary installation of the following types of facilities shall be avoided: temporary elevated earthen structures such as roads and berms; earthen bridges or other structures within a waterway or flood conveyance that could interfere with flood flows; dams; unnecessary ditches; and other major structures that could concentrate flood flows. Additionally, to the extent practicable, the Applicant shall ensure that the construction process proceeds in a manner so as to minimize exposure of facilities to construction period flooding. Temporary ditches and trenches (such as for pipes, wires, or other infrastructure) shall be completed and backfilled as quickly as possible, and shall not be left open for extended periods. Drainage infrastructure shall be installed prior to installation of the solar arrays and other facilities on site. Other facilities that may be susceptible to flood damage during construction shall be managed so as to minimize construction time of those facilities. Prior to initiation of DQSP operation, the Applicant shall develop and implement a Flood Safety Plan for the site. The Flood Safety Plan shall delineate specific actions to be completed during a flood event, in order to protect workers and facilities as relevant. The Plan shall identify refuge areas that would not be susceptible to 100-year flooding, and provide requirements and guidance with respect to avoiding injury, death, or equipment damage during a flood event. The Plan shall be adhered to and updated, as needed, during the entire operation period of the DQSP.

WATER-4: Groundwater Monitoring and Mitigation Plan. If the Applicant chooses to install groundwater production wells, a Groundwater Monitoring and Mitigation Plan shall be developed and implemented prior to construction. The Groundwater Monitoring and Mitigation Plan shall be prepared by a qualified hydrogeologist registered in the State of California and submitted by the Applicant to the BLM and County for approval.

The Groundwater Monitoring and Mitigation Plan shall be based on a numerical groundwater model acceptable to the BLM and shall provide detailed methodology for monitoring background and onsite groundwater levels, water quality, and flow rates, including installation of flow meters. The Plan shall include installation of one or more monitoring wells in which the effect of groundwater withdrawal on groundwater levels can be monitored through periodic water level measurements. Monitoring shall be performed prior to construction to establish pre-construction groundwater level and water quality that can be used as a baseline against which later measurements can be compared, and to establish trigger points that would be used to determine the need for additional monitoring, investigation, and/or mitigation.

All production wells shall be metered, and the meters shall be tamper-proof and certified. Monitoring will be monthly. If a trigger point is reached, the Applicant shall notify BLM within 7 days, and shall increase the frequency of monitoring to weekly. If trigger point exceedances continue for 3 successive readings, Applicant shall meet with the BLM to re-evaluate operating conditions, which could include additional monitoring, investigation, or mitigation, and/or cessation of pumping.

The Groundwater Monitoring and Mitigation Plan shall include a schedule for submittal of monthly data reports by the Applicant to the BLM and County, for the duration of the monitoring period. These data reports shall be prepared and submitted to the BLM and County for review and approval, and shall include water level monitoring data (trend analyses) from all production and monitoring wells. Based on the results of the reports, the Applicant, the BLM, and the County shall determine if the Project's pumping activities have resulted in water level decline in the baseline at any of the monitoring wells, including nearby private wells, if any. If drawdown exceeds the established trigger levels, the Applicant shall immediately reduce groundwater pumping until water levels stabilize or recover to a reasonable level.

The Groundwater Monitoring and Mitigation Plan shall also include a schedule for submittal of annual data reports by the Applicant to the BLM and County for the first 5 years of the Project (including the construction period). These annual data reports shall be prepared and submitted to the BLM and County for review and approval, and shall include at a minimum the following information:

1. Daily usage, monthly range, and monthly average of daily water usage in gallons per day;
2. Total water used on a monthly and annual basis in acre-feet; summary of all water level data and water quality data;
3. Identification of trends that indicate potential for offsite wells to experience decline of water level; and
4. Identification of all sources of water by type (i.e., groundwater, surface water, municipal water) and well/location used on BLM land.

Upon receipt of each annual data report, the BLM and County shall determine whether groundwater wells surrounding the Project site and Project supply well(s) are influenced by Project activities in a way that requires additional mitigation and, if so, shall determine what measures are needed. After the first 5 years of the Project, the Applicant, the BLM, and the County shall jointly evaluate the effectiveness of the Groundwater Monitoring and Mitigation Plan and determine if monitoring frequencies or procedures should be revised or eliminated.

G.21 WILDLAND FIRE ECOLOGY

The following Project-specific mitigation measures were developed to reduce and/or avoid potential impacts associated with wildland fire associated with the Project and alternatives.

FIRE-1: Fire Safety Plan. Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall prepare and implement a Fire Safety Plan to ensure the safety of workers and the public during Project construction, operation and maintenance, and decommissioning activities. This plan shall complement or supplement provisions of the Applicant's proposed Hazardous Materials Management and Emergency Response Plan. The Fire Safety Plan shall be provided to the BLM and RCFD for approval before the Applicant receives a Notice to Proceed (NTP). The Fire Safety Plan shall include, but not be limited to, the following elements:

1. All internal combustion engines used at the Project site shall be equipped with spark arrestors. Spark arrestors shall be in good working order.

2. Once initial two-track roads have been cut and initial fencing completed, light trucks and cars shall be used only on roads where the roadway is cleared of vegetation. Mufflers on all cars and light trucks shall be maintained in good working order.
3. Fire rules shall be posted on the Project bulletin board at the contractor's field office and areas visible to employees.
4. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.
5. The Applicant shall make an effort to restrict use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to outside of the official fire season. When the above tools are used, water tanks equipped with hoses shall easily accessible to personnel.
6. Smoking shall be prohibited in wildland areas and within 50 feet of combustible materials storage, and shall be limited to paved areas or areas cleared of all vegetation.
7. Each Project construction site (if construction occurs simultaneously at various locations) and the proposed solar plant site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires.
8. The Applicant shall coordinate with the RCFD to create a training component for emergency first responders to prepare for specialized emergency incidents that may occur at the Project site.
9. Construction workers, plant personnel, and maintenance workers at the plant and/or transmission lines to perform maintenance activities shall receive training on the proper use of fire-fighting equipment and procedures to be followed in the event of a fire. Training records shall be maintained and be available for review by the RCFD.
10. Vegetation near all solar panel arrays, ancillary equipment, and access roads shall be controlled through periodic cutting and spraying of weeds, in accordance with the VRMP.
11. The BLM and RCFD shall be consulted during plan preparation and fire safety measures recommended by the agencies included.
12. The plan shall list fire prevention procedures and specific emergency response and evacuation measures that would be required to be followed during emergency situations.
13. Operations employees shall participate in annual fire prevention and response training exercises with the RCFD
14. The Applicant shall designate an emergency services coordinator from among the full-time on-site employees who shall perform routine patrols of the site during the fire season equipped with a portable fire extinguisher and communications equipment. The Applicant shall notify the BLM and County of the name and contact information of the current emergency services coordinator in the event of any change.
15. Remote monitoring of all major electrical equipment (transformers and inverters) will screen for unusual operating conditions. Higher than nominal temperatures, for

example, can be compared with other operational factors to indicate the potential for overheating which under certain conditions could precipitate a fire. Units could then be shut down or generation curtailed remotely until corrective actions are taken.

16. Fires ignited onsite shall be immediately reported to BLM FIRE and the RCFD.

The engineering, procurement, and construction contract(s) for the proposed Project shall clearly state the requirements of this mitigation measure.

G.22 SUMMARY

Table G-22-1 describes the timing, responsible agency, and methods for verification of each mitigation measure.

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
AQ-1	Dust Control Plan	Plan to be reviewed and approved by BLM, the County, and MDAQMD.	Plan to be submitted no less than 60 days prior to start of construction. Plan implementation to be ongoing throughout construction activities.	BLM, Riverside County, and MDAQMD
AQ-2	Protect the Stability of Desert Pavement Areas	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and Riverside County
AQ-3	Construction Emissions Reduction	Inventory of equipment and DOORS registration.	Ongoing throughout construction activities	BLM, Riverside County, and CARB
VEG-1	Qualifications of Designated Biologist(s)	Proposed staff to be reviewed and approved by BLM and the County.	Prior to the start of ground disturbance and issuance of a County grading permit.	BLM and Riverside County
VEG-2	Duties of the Designated Biologist(s)	Ongoing communication with BLM, CDFW, and USFWS.	Ongoing throughout construction activities	BLM, Riverside County, USFWS, and CDFW
VEG-3	Identification of Biological Monitors	Proposed staff to be reviewed and approved by BLM and the County.	Prior to the start of ground disturbance and issuance of a County grading permit.	BLM and Riverside County

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
VEG-4	Duties of Biological Monitors	Ongoing communication with the Designated Biologist, who shall report to BLM, CDFW, and USFWS.	Ongoing throughout construction activities	BLM and Riverside County
VEG-5	Authority of the Designated Biologist(s) and Biological Monitors	Ongoing communication with the Designated Biologist, who shall report to BLM, CDFW, and USFWS.	Ongoing throughout construction activities	BLM and Riverside County
VEG-6	Worker Environmental Awareness Program	Program to be reviewed and approved by BLM and the County.	Ongoing throughout construction, operations, and decommissioning	BLM and Riverside County
VEG-7	Biological Resources Mitigation Implementation and Monitoring Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and Riverside County
VEG-8	Avoidance of Biological Resources During Construction	Specific plans (Nesting Bird Monitoring and Management, Revegetation) to be reviewed and approved by BLM. Other activities to be verified through various reporting mechanisms to BLM.	Disturbance limits to be established prior to start of construction. Plan implementation to be ongoing throughout construction, operations, and decommissioning. Restoration to occur within 30 days following completion of construction.	BLM and Riverside County

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
VEG-9	Special-Status Plant Species Impact Avoidance and Minimization, and Compensation	Plan to be reviewed and approved by BLM and the County. Compensation to be verified through BLM approval of compensation type and amount.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning. Compensation to be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	Plan agencies are BLM and Riverside County. Agency responsible for compensation is BLM.
VEG-10	Mitigation for Impacts to Sensitive Riparian Habitat and State Waters	Compensation to be verified through CDFW approval of compensation type and amount.	Compensation to be completed within 18 months after the start of ground disturbance.	CDFW
VEG-11	Project Phasing	Mitigation activities for each phase to be verified by the agency responsible for that activity.	Construction schedule and plans to be submitted prior to initiating each phase of construction.	BLM
VEG-12	Monitoring and Research	BLM to verify they are granted access, as required.	Ongoing throughout construction, operations, and decommissioning	BLM
WIL-1	Measures to Avoid Take of Mojave Desert Tortoise	Plans and specifications to be reviewed and approved by BLM and USFWS. Implementation of plans and specifications to be verified through compliance reports submitted to BLM and USFWS.	Surveys and fencing to be completed prior to start of construction. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and USFWS

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
WIL-2	Mojave Desert Tortoise Translocation Plan	Plan to be reviewed and approved by BLM and USFWS.	Plan to be submitted and tortoises translocated prior to start of ground disturbance.	BLM and USFWS
WIL-3	Project Notifications and Reporting	BLM to have access to verify compliance. Applicant to perform required inspections and submit to BLM, CDFW, and/or USFWS as specified.	Ongoing throughout construction, operations, and decommissioning	BLM, USFWS, and CDFW
WIL-4	Compensatory Mitigation for Desert Tortoise Habitat Losses	Compensation to be verified through BLM approval of compensation type and amount.	Compensation to be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	BLM
WIL-5	Raven Management Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and Riverside County
WIL-6	Bird and Bat Conservation Strategy	BBCS to be reviewed and approved by BLM, the County, USFWS, and CDFW.	BBCS to be submitted prior to the Notice to Proceed. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM, Riverside County, USFWS, and CDFW

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
WIL-7	Pre-Construction Nest Surveys	Survey results to be submitted to BLM.	Surveys to be completed prior to start of ground disturbance, including grading or mowing.	BLM
WIL-8	American Badger and Desert Kit Fox Protection	Plan to be reviewed and approved by BLM, USFWS, and CDFW.	Plan to be submitted at least 45 days prior to start of construction. Surveys to be completed no more than 30 days prior to start of construction.	BLM, USFWS, and CDFW
WIL-9	Burrowing Owl Protection and Mitigation	Plan to be reviewed and approved by BLM, USFWS, and CDFW.	Surveys to be completed no more than 30 days and no less than 14 days prior to start of construction. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	BLM, USFWS, and CDFW. Agency responsible for compensation is BLM.
WIL-10	Compensatory Mitigation for Mojave Fringe-toed Lizard Habitat Losses	Compensation to be verified through BLM approval of compensation type and amount.	Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	BLM

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
WIL-11	In-Lieu Fees to Satisfy Compensation Requirements	Compensation to be verified through BLM approval of compensation type and amount.	Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	BLM
WIL-12	Couch's Spadefoot Toad Protection and Mitigation	Plan to be reviewed and approved by BLM and CDFW.	Plan to be submitted prior to start of ground disturbance. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and CDFW
WIL-13	Development of Ponding Area	BLM to approve any proposed ponds.	Approvals to be received before any ponds are developed.	BLM
CULTURAL-1	NHPA §106 Memorandum of Agreement	MOA to be developed by BLM in consultation with the ACHP, SHPO, the Applicant, Riverside County, and Native American Tribes.	MOA to be developed prior to the ROD. Implementation to be ongoing throughout construction, operations, and decommissioning.	BLM, ACHP, SHPO, Riverside County, and Native American Tribes
CULTURAL-2	Historic Properties Treatment Plan (HPTP)	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and Riverside County

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
CULTURAL-3	Identification of Human Remains	Incidents to be reported to County Coroner.	Reporting to be ongoing throughout construction, operations, and decommissioning.	Riverside County
CULTURAL-4	Unanticipated Discoveries	Incidents to be reported to Native American Tribal Observer, BLM, and County Archaeologist.	Implementation to be ongoing throughout construction, operations, and decommissioning.	Native American Tribal Observer, BLM, and County Archaeologist
CULTURAL-5	Monitoring and Discovery Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction.	BLM and Riverside County
CULTURAL-6	Tribal Observer	Documentation of efforts to contract Tribal Observers to be submitted to BLM and County Archaeologists.	Within 60 days prior to ground disturbance.	Native American Tribal Observer, BLM, and County Archaeologist
CULTURAL-7	Cultural Resources Monitoring Report	Report to be submitted to BLM and County Archaeologists.	Prior to the final inspection of the first building permit.	BLM and Riverside County
GEO-1	Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design	Study results and proposed solutions to be submitted to BLM and the County Engineering Geologist.	60 days before final Project design.	BLM and Riverside County
GHG-1	Seal Circuit Breakers	Owners of gas-insulated switchgear required to report emissions annually to CARB.	Annually.	CARB

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
HAZ-1	Site-Specific Hazardous Materials Management and Emergency Response Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to Notice to Proceed. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and Riverside County
HAZ-2	Broken PV Module Detection and Handling	Disposal of California-state hazardous waste, if any, is regulated by DTSC.	Ongoing throughout construction, operations, and decommissioning.	DTSC
HAZ-3	Aircraft Safety Consultation	Verified by filing of FAA Forms 7460-1.	At least 45 days prior to the start of construction.	FAA
UXO-1	UXO Identification, Training, and Reporting Plan	Plan to be reviewed and approved by BLM.	Plan to be submitted at least 30 days prior to the start of construction, and within 30 days of the completion of surveys. Plan implementation to be ongoing throughout construction.	BLM
TLSN-1	Radio Frequency Interference	Records of complaints to be submitted to BLM upon request.	Ongoing throughout operations.	BLM
NOISE-1	Noise Level Monitoring	Results of noise level monitoring to be submitted to BLM and the County.	Ongoing throughout construction activities	BLM and Riverside County
PAL-1	Project Paleontologist	Proposed staff to be reviewed and approved by BLM and the County.	Prior to the issuance of a Notice to Proceed.	BLM and Riverside County
PAL-2	Materials for Project Paleontologist and BLM Authorized Officer	Materials to be provided to BLM.	Prior to the start of each phase of construction.	BLM

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
PAL-3	Paleontological Resources Monitoring and Mitigation Plan (PRMMP)	Plan to be reviewed and approved by BLM.	Plan to be submitted prior to Notice to Proceed. Plan implementation to be ongoing throughout construction and any other ground disturbance.	BLM
PAL-4	Approved Training Pertaining to Ground Disturbance	Training materials to be provided to BLM for approval.	Materials to be submitted prior to start of ground disturbance. Training to be implemented throughout construction and any other ground disturbance.	BLM
PAL-5	Pedestrian Paleontological Survey	Survey results to be submitted to BLM and the County.	Prior to Final EIS.	BLM and Riverside County
PAL-6	Paleontological Monitoring Activities	Activities to be verified through daily log and monthly compliance report.	Throughout construction and any other ground disturbance. Activities to be verified through daily log and monthly compliance report.	BLM and Riverside County
PAL-7	Implementation of PRMMP	Activities to be verified through daily log and monthly compliance report.	Throughout construction and any other ground disturbance. Activities to be verified through daily log and monthly compliance report.	BLM and Riverside County
PAL-8	Paleontological Resources Report (PRR)	Report to be submitted to BLM and the County.	Within 30 days following completion of ground-disturbing activities	BLM and Riverside County

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
REC-1	Access to Mule Mountains ACEC	Draft interpretive materials to be submitted to BLM for review and approval.	Prior to Project construction, and then periodically throughout the duration of the Project.	BLM
REC-2	Temporary Route Closure	Documentation of coordination efforts to be submitted to BLM and other affected agencies.	No less than 60 days prior to construction and maintenance of the gen-tie line. Documentation to be provided at least 30 days prior to construction.	BLM and Riverside County
REC-3	Use of Long-Term Visitor Areas (LTVAs)	Specific authorization from BLM to be sought for use of the LTVAs.	Prior to use of LTVAs.	BLM
TRN-1	Traffic Monitoring and Control Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction.	BLM and Riverside County
TRN-2	Coordinated Transportation Management Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of construction. Plan implementation to be ongoing throughout construction.	BLM and Riverside County
TRN-3	Reduce Construction Worker Vehicles	Revised traffic analysis to be submitted to BLM and the County for review and approval.	Analysis to be submitted prior to the Notice to Proceed. Results of analysis to be implemented throughout construction.	BLM and Riverside County

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
TRN-4	Improve Access Road	Grading Plan to be reviewed and approved by County transportation department.	Prior to construction of the Project fence, solar facility, gen-tie, temporary construction areas, and other facilities.	Riverside County
VIS-1	Project Design, Building and Structural Materials	Project designs, specifications, and Lighting Plan to be submitted to BLM District Office for review and approval.	Construction plans, details, shop drawings and specifications to be submitted to BLM prior to the Notice to Proceed.	BLM
VIS-2	Construction Phase Visual Mitigation	Measures to be established in pre-construction meeting with BLM landscape architects or other designated visual/scenic resource specialists.	Ongoing throughout construction activities	BLM
VIS-3	Operation and Maintenance Phase Visual Mitigation	Objectives, adaptive management adjustments, and modifications to be reviewed and approved by BLM.	Ongoing throughout operations	BLM
VIS-4	Decommissioning and Site Restoration Plan	Plan to be reviewed and approved by BLM.	Plan to be submitted prior to start of construction. Plan implementation to be undertaken as soon as possible after disturbances occur. Monitoring to be conducted twice annually for 5 years and may be extended for an additional 5 years if the performance standards have not been achieved	BLM

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
WATER-1	Implementation of a SWPPP	Plan to be reviewed and approved by BLM.	Ongoing throughout construction, decommissioning, and any other ground disturbance greater than one acre.	BLM
WATER-2	Comprehensive Drainage, Stormwater, and Sedimentation Control Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction and decommissioning.	BLM and Riverside County
WATER-3	Flood Protection	Grading Plan and Flood Safety Plan to be submitted to BLM and County for review and approval.	Plans to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and Riverside County
WATER-4	Groundwater Monitoring and Mitigation Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of construction. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and Riverside County

Table G-22-1. Summary of Mitigation Measures

Measure Number	Measure Title	Method of Verification	Timing of Measure	Responsible Agency
FIRE-1	Fire Safety Plan	Plan to be reviewed and approved by BLM and the RCFD.	Plans to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM and RCFD

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